

Kodiak Commercial Fisheries Salmon Management  
Field Camp and Weir  
Operational Plan, 2002

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## INTRODUCTION

This operational plan is provided to inform and instruct Alaska Department of Fish and Game (ADF&G) seasonal employees regarding their responsibilities for opening field camps, preparing, maintaining, installing, and operating weirs as well as effectively accomplishing required tasks, duties, and responsibilities. This document also addresses standard operating procedures for Kodiak weir camps in the Kodiak Management Area (KMA). It has been prepared to help field crewmembers perform and understand their job and to answer commonly asked questions. All field employees will be required to read this document prior to their deployment. In addition all field employees will read the Standard Operating Procedures (SOP) pertinent to their work and be familiar with the current KMA Commercial Salmon Fishery Harvest Strategy.

The KMA encompasses the entire Kodiak Archipelago and that portion of the Alaska Peninsula draining into Shelikof Strait from Cape Douglas to Kilokak Rocks (Figure 1). The archipelago and Alaska Peninsula portions of the management area are each about 241 km in length while Shelikof Strait, separating the two, averages 48 km in width.

The KMA is composed of seven commercial salmon fishing districts and 52 sections, which encompass 440 streams supporting commercially viable salmon populations. Emphasis of the commercial fishery management program is to achieve established escapement goals while ensuring local stock surplus production is harvested in an orderly fashion (Prokopowich 1999). Five species of salmon are harvested within the KMA, all of which have established escapement goal ranges. The targeted escapement goals for KMA salmon area wide are 15,000 chinook, *O. tshawytscha*, 1.7 million sockeye, *Oncorhynchus nerka*, 3 million (odd years) to 4.5 million (even years) pink, *O. gorbuscha*, 150,000 coho, *O. kisutch*, and 550,000 chum salmon, *O. keta* (Brennan 2001). Directed commercial fisheries occur on sockeye, pink, chum, and coho salmon; chinook salmon are not targeted. To properly manage the fishery inseason; managers employ qualitative analysis of run timing, catch per unit effort (CPUE), and species composition of the catch, while also considering regulatory management plans, estimates of salmon build-up and escapement from aerial surveys and daily weir counts.

Weirs provide the primary mode of enumeration for virtually all sockeye salmon escapements into major systems on Kodiak Island (Figure 1). These systems include the Ayakulik, Dog Salmon (Frazer Lake), Karluk, and Upper Station (Olga Lakes). Weirs on minor systems include Akalura, Litnik (Afognak Lake), Paul's Bay and Saltery creeks (Figure 1). Aerial and foot surveys are also conducted on some area streams for indexing sockeye, pink, chum, and coho salmon escapements (Prokopowich 1998).

Annually ADF&G personnel sample sockeye salmon escapements from both major and minor spawning systems for biological characteristics, such as age, length, and sex. These samples provide the foundation for preseason run forecasts, escapement goal evaluation, and accurate assignment of the run to stock of origin (run reconstruction). As the demand on KMA salmon resource increases, so does the intrinsic value of these data. Therefore, it is imperative that all data collected are of the highest quality possible.

In 2002, the ADF&G salmon management crews at the Akalura, Ayakulik, Dog Salmon, Karluk, Litnik, Saltery, and Upper Station will enumerate and all but Dog Salmon will sample fish from the escapement. Refer to the Weir Camp section for specific information pertaining to each individual field camp and weir. The ADF&G Salmon Research and Development crews will enumerate and sample fish from Frazer, Spiridon, Malina, Foul Bay, and Waterfall systems.

## **GOAL**

The primary goal of salmon management weirs as a management tool is to achieve established escapements into river systems while ensuring that surpluses are harvested within the KMA.

## **OBJECTIVES**

Long Term: To improve management of salmon resources of the KMA through run forecasting, development of stock-recruitment relationships to assess escapement requirements, and accurate assessment of stock composition. The overall objective of managing the KMA salmon fisheries is to provide an orderly harvest of salmon surplus to escapement requirements for each of the targeted species and systems.

Short Term: The primary duties of the personnel stationed at KMA weir facilities are to:

1. Install, operate and maintain weirs and field facilities.
2. Provide unobstructed and timely salmon escapement into the river system by enumerating salmon species through the weir.
3. Estimate concentrations of fish in the lower portions of the river below the weir, in the river mouth, lagoons, and off shore, including fish schooled in closed water sanctuaries in and around each system.
4. Collect representative samples of scales (for age determination and scale pattern analysis), length distribution, and sex ratios from escapements into individual systems.
5. Maintain accurate data collection records and transmit reports on a timely basis.

Basic Policy for Weir Stations: Accomplish all essential daily fieldwork before pursuing personal interests (i.e., sport fishing, hiking, etc.). Safety and common sense should be your ultimate guides.

## **SUPERVISION AND TRAINING**

Kevin Brennan, the Area Management Biologist (AMB), is responsible for the conservation of the KMA salmon resource, management of the commercial fisheries and is the overall project leader. Assistant management biologists Dennis Gretsche and Jeff Wadle are the weir camp project leaders. They will provide oversight, supervision, and logistical and technical support for field camps and weir operations. The crew leader of each weir is responsible for training new employees, scheduling and prioritizing daily work assignments, assuring collected data adheres to plan standards, and assuring safety will be a priority. A brief chronology of assignments is presented in Table 1 and important duties to remember are presented in Table 2. The project leader is responsible for making sure that the crew read and understand the department's field safety policies, Standard Operating Procedures (SOP) and sign the EMPLOYEE SAFETY SOP VERIFICATION. The crew leader of each camp should make sure these documents are secured from the project leader prior to departing for the field. The crew leader is also responsible for the accuracy, completeness, and neatness of the collected data. Crew leaders at each specific camp will prioritize, oversee duties and establish work schedules. More details on crew leader responsibilities are presented in a later section (see 'Crew Leader Responsibilities').

In addition to mandatory CPR and First Aid training, each crewmember will also complete two Management Section Training Courses: Field Safety Training and Adult Sampling Protocols.

## **PERSONNEL**

ADF&G will operate KMA weirs from approximately 25 May through 15 September, except the Karluk weir may stay in beyond 30 September depending on weather and run timing. Normally two people are assigned to each project; additional assistance if necessary will be provided during weir installation and removal, periods of immense salmon escapements and if debris flushing out of the river system requires continuous maintenance of the weir.

### ***Compatibility of Field Personnel***

At all times state employees are expected to act in a professional manner. Fieldwork will likely require spending several months working in remote areas and living in a small tent or cabin. Employees are expected to act in a respectful manner toward each other. Failure to act cooperatively could result in a transfer to another field camp or possible dismissal. If you find yourself unable to get along with coworkers in your camp, notify the project leader in the Kodiak office and they will attempt to resolve the problem, which could involve rearranging personnel in camps.

Usually the person with the most experience in the camp will be the crew leader. If it is unclear who has been designated crew leader in your camp, ask your supervisor.

## METHODS AND PROCEDURES

### *Opening Camp*

Upon arrival at camp, the first day should be utilized opening the field camp facility, organizing, storing supplies and personal gear, setting up the single sideband (SSB) radio, and preparing the necessary gear and equipment for the following day which is weir installation (Table 1).

## WEIR OPERATION AND ADULT SAMPLING

### *Objectives*

1. Enumerate adult salmon escapement and estimate salmon build up in the lower portions of the river and the mouth, lagoons and off shore, including fish schooled in closed water sanctuaries in and around each system.
2. Monitor escapement quality, including the numbers of net-marked and "jack"(immature <400mm mid eye to tail fork) sockeye salmon.
3. Conduct escapement sampling.

### *Duties*

1. Operate and maintain the weir continuously until a decision to remove the weir is made by the project biologist.
2. Count the daily escapement by species, noting the number of net-marked and jack sockeye salmon.
3. Sample 80 adult sockeye salmon three times per week (240 total per week) for age, length, and sex.
4. Beginning in mid-August, conduct surveys at specified streams to document escapement, distribution and spawning abundance patterns.

### *Weir Installation, Operation, and Maintenance*

Installation of the weir should commence the day following opening the camp. Specific instructions for weir installation, maintenance and operations are provided in Appendix A. It is a requirement to clean and inspect weirs daily for holes, insuring that they are fish tight. Keeping the weir clean of debris inhibits scouring, reduces resistance against the weir panels and framework, and lessens the possibility of weir washout. All weir panels should be tightly wired or secured with seine twine to the upper 4 x 4 stringers. All gaps between the weir panels greater than

76 mm (1.5 inches) should be filled with individual aluminum pipes; holes at the base of the weir should be blocked with sandbags or large rocks and gravel. This is extremely important since fish that escape through any holes will not be counted. To reduce erosion, the bottom of all weir panels should be entrenched into the riverbed and back-filled with gravel and rock. In addition to entrenching weir panels, on smaller weirs sandbags should be placed at the bottom of each weir panel on the upstream side. Sandbags should line the entire weir to insure it is fish tight. This measure also inhibits erosion.

Escapement counting frequency will be scheduled to minimize migration delay. Specifically, counts will be made at least four times daily using polarized glasses to improve visual recognition, identification, and accuracy. Counting frequency will be increased during the peak of the escapement. Individual counts, by species, will be recorded using hand-held tally counters. Data should be recorded on the Weekly Salmon Weir Count Report Form (Figure 2). A standard escapement counting and sampling week will extend from Friday to Saturday.

Do not leave the camp if a large number of fish are behind the weir. Always count fish through as soon as possible. The weir should always be attended by at least one person with the following exception: at two person weir camps, both employees may leave to perform bay or stream surveys, commercial or sport fishery monitoring, or other duties as assigned. Whenever both employees leave, a note should be left at the cabin stating destination, purpose, and expected time of return. At three person stations, the remaining individual will be made aware of the above information.

### *Escapement Sampling*

In most camps, sockeye salmon escapement age, length, and sex (ALS) sampling should be conducted at a rate of 240 fish per statistical week. The escapement sampling strategy will be similar to recent years; rather than attempting to collect all the samples during a single day of the statistical week; sampling effort will be distributed more evenly across the statistical week. In general, 80 samples will be collected every other day of the statistical week. Ideally, 80 samples will be collected each Saturday, Monday, and Wednesday; statistical weeks begin each Friday. If it is obvious to the crew leader that following this strategy will result in failure to obtain the desired 240-sample size per week, adjustments should be made. Before the field season begins KMA salmon research staff will orient field crews, and provide a copy of the Salmon Escapement Sampling Operational Plan. Refer to this plan for sampling guidelines and procedures.

### *Stream Escapement Surveys*

Some field projects may require stream surveys to be conducted by foot on local minor systems. The primary objective is to document distribution and abundance of salmon escapement into minor systems. Foot surveys will be conducted beginning 15 August. These surveys typically focus on chum, pink, and coho salmon. Streams should be surveyed to the upper limits of spawner distribution, and the number of live and dead fish recorded on the Stream Survey Form (Figure 3). Stream mouth counts will be recorded separately from actual in-stream counts. Observers will survey on foot, counting live and dead salmon species using polarized glasses and tally counters. Before conducting surveys, tally counters will be inspected for proper functioning. While

conducting these surveys carry a shotgun or rifle in the 300 magnum or larger class, a whistle and or air horn. The best strategy is for one person to count while the other guards against bear encounters. Gun safety/training will be provided during the Field Safety course prior to entering the field.

## **CREW LEADER RESPONSIBILITIES**

### ***Daily Radio Schedule***

The previous day's counts and cumulative salmon escapement information will be reported each morning at approximately 8:00 AM on SSB frequency 3.230 MHz. This information will be recorded on the Weekly Salmon Weir Count Report Form (Figure 2) and carefully edited prior to morning radio schedule. In addition the entire weekly escapement form must be proof read each Saturday evening. A second radio schedule occurs at 8:00 PM. The evening schedule is implemented to check on field personnel, discuss salmon build up and escapements, to pass along short lists of supply requests, and to receive the latest commercial fishery announcements. Radio schedules are very important, and should be taken seriously. **KEEP SCHEDULES SHORT AND TO THE POINT**, especially during the AM schedule. Failure to make consecutive radio schedules will result in a flight to the camp to ensure the safety of the crew. Personal correspondence between camps should be conducted when there are no other ADF&G schedules, preferably after 9:00 PM.

Conversation during all radio schedules will be kept to a professional level, since many fishermen and other department personnel are monitoring these schedules.

Advise your supervisor if you plan to miss a radio schedule. Remember to keep your battery charged and have spare fuses available.

If necessary you can contact someone at the Kodiak Office anytime during normal working hours on 3.230 MHz. The 4.125 frequency is also for use in emergencies.

### ***Air Charters***

Kodiak staff will arrange all air charters. Essential information concerning charters will be relayed during daily radio contact. It is important to properly label any data, equipment, or other freight that will be "back hauled" to Kodiak, and advise office personnel about its arrival.

### ***Time Sheets and Leave***

During the field season, crewleaders are responsible for keeping track of all work time. Time sheets will be provided and a template with the appropriate codes will be available for an example. Recorded time on the time sheets will be 'actual hours' spent on the job. Obviously, there is a finite budget and a list of priorities. Complete tasks in their order of priority, without accruing excess overtime. Most projects can be finished within normal working hours; however, there may be occasions when the normal working day (7.5 hours) is insufficient to complete the necessary tasks.

If unusual circumstances arise that require additional overtime, the project leader should be notified immediately. Weir camps are budgeted for 20 overtime hours per month and additional overtime exceeding the 20 hours must be approved in advance.

During the field season, crewmembers will have scheduled days off, although not necessarily on weekends. The crew leader will determine normal days off for the crew. During these normal working days off, crewmembers should realize that they are still ADF&G employees and their actions reflect on the department.

Extended leave is not allowed during the field season, and Emergency leave may be authorized upon request. Under no circumstance should the employee leave the job site without notification and authorization of the project leaders.

### ***Data Management***

An important duty of the crew leader is properly recording and safekeeping collected data. Prior to the field season the project leader will review the biological measurements and the proper way to complete the data forms with the crew leader. In the field, the crew leader is responsible to ensure that measurements are taken properly and accurately recorded. The crew leader is also responsible to ensure that the forms and samples are recorded completely, correctly, and neatly. Neatness and accuracy are an important aspect of the crew leader's responsibilities. Collected age, length and sex (ALS) data is recorded on opscan data forms. A Computer digitally scans them, and errant or missing marks may erroneously become part of the database. It is also the crew leader's responsibility to keep a daily log. The daily log should include a record of daily weather, water temperature, stream depth, water conditions, a record of work accomplished, escapement counts for the day, and survey notes related to numbers of salmon schooled offshore or noted build up of salmon in the river or lagoons below the weir. Additional entries should include comments related to fishing activity, bear and people encounters, smolt migrations, weir problems, regulation violations, cabin maintenance and aircraft traffic. Clear and well-organized data reflects highly on the crew leader and the crew.

### ***Ordering Food and Supplies***

Field crews often need to purchase items prior to leaving for the field camp and may also request items (e.g., groceries) while in the field. While in town, crews will only purchase items authorized by the project leader. If the crew desires an item that they believe could be helpful for the project they should ask the project leader prior to purchasing.

Field crews often require additional items (e.g., groceries, fuel, or tools) during the season. Grocery and mail flights are scheduled twice a month. Keep an inventory of food to last two and a half weeks, but do not overstock perishables such as fresh vegetables. Order enough food to eat well but be reasonable (i.e., steaks every night is extravagant). If your grocery orders become unreasonable, less expensive items may be substituted. **EAT** what you order. Grocery and supply orders must be in the Kodiak office at least one week prior to the scheduled flight.

Alcoholic beverages, canned pop, personal-grooming supplies, candy, newspapers, magazines and tobacco must be purchased with personal funds.

Try to anticipate shortages of supplies, especially fuel, and data forms. Order these supplies before you run out. Small lists may be read over the radio during evening radio schedule; however, these lists should be limited to just a few items. It should be remembered that radio time is limited and there are a number of other camps statewide that use the same frequency. Longer lists of materials will be sent to town on supply flights. In accordance, blank grocery lists will be sent to the field and the crew leader should remember to send orders in advance to ensure the correct grocery order for the next supply flight. The budget allocates approximately \$15/day/person, and this allocation will not be exceeded. Crew leaders should track grocery expenses and limit the number of requested specialty items. Similar planning should be made for fuel. Fuel is a necessity for many camp operations including heating the facility. However, oil heaters should be turned off or down during the day while the crew is working outside. Oil heaters and wood stoves should be completely off prior to leaving the cabin for any extended time.

### ***Camp Inventory and Closing Camp***

Each weir camp will be inventoried for all gear prior to camp close up. Winterizing the cabin should include (but is not limited to): covering windows, covering and insulating propane connections, closing and locking all doors, winterizing all motorized equipment, chaining and locking boats stored on site in a secure location. See Tables 3-5 for examples of a Camp Closing Check off List, Salmon Weir Camp Equipment Status, and Salmon Weir Camp Closing and Inventory lists.

### ***Photo Documentation***

The crew leader will be responsible for photo documenting project activities. It is important to photograph specific aspects such as trap installation, adult sampling, weir operation, structural problems, and remedies to the weir and other detailed tasks. When possible ADF&G cameras and film will be used. However, if ADF&G cameras are not available, film will be provided for use with personal cameras: (In this case, the use of personal cameras is suggested but not required).

### ***Visitors / Public Interaction***

Some weir sites get many visitors, from day-use sport fishing and bear viewing to extended use through local lodges and campers. Many of these visitors may come by the camp because the weir attracts bears for good bear viewing. Visitors also like to see the fish passing through the weir. Because of this public contact, keep the camp clean and be courteous and helpful to visitors, but also inform them of boundaries. The general public is not allowed to access the weir. Make sure KEEP OFF WEIR signs are posted. Be helpful when you can, but remember your primary role is to operate and maintain the weir and the associated responsibilities of the project. It is not in your job description to give tours of the weir or act as bear viewing guides. If guides, outfitters, and the general public request tours of the weirs do your best to be helpful by asking them to schedule an



appointment to accommodate their request. Under no circumstance should any state employee accept payment or gratuities for such tours or public contact.

### ***Season Summary Report***

The crew leader is responsible for writing a season summary report. This report may be started in the field; however, the report is usually completed in town. The summary report will be a brief synopsis of the field season and include, but is not limited to: (1) a chronology of weir installation and operations, (2) personnel that worked on site throughout the season, (3) salmon escapement and timing, (4) a chronology of sampling events and data collection, (5) problems incurred during the season, including sampling, field camp operations, and violations observed, (6) suggestions for improvements/modifications to the enumeration and sampling programs as well as maintenance requirements for the camp buildings, (7) equipment/building supplies needed for the following field season, (8) an accurate log of fuel consumption used for respective fuels to operate heating stoves and motorized equipment and (9) an inventory of equipment, tools and fuels stored on site. In addition, the crew leader is responsible for completing performance evaluation questionnaires of the field crew.

### **ADDITIONAL GUIDELINES AND PROCEDURES**

This section provides additional information regarding guidelines, procedures and policies for you to perform your job correctly and safely. General equipment, camp maintenance, and policy is also covered and provided in Appendix B, weir removal procedures in Appendix C, equipment and supply list in Appendix D.

### ***Questions on Procedures and Suggestions***

If you have any questions about sampling procedures, policies, etc. **ask your project leader** either over the radio, in a letter, or in person. If you have any suggestions, **write them down** and pass them along as well. They are appreciated and will be considered.

### ***Data Recording and Labeling***

All completed data forms and any written correspondence sent to town from field camps will have the name of the camp on it, including the name of individuals filling out forms and working at the weir.

A record of field work and activities including, numbers of fish counted and sampled, when weirs were installed/removed, holes in weirs, estimates of fish, tagging information, etc. will be recorded in a logbook. Rite-in-the-rain ledgers will be provided for logbook entries. As previously mentioned this information will also be recorded on weekly weir report sheets, which are sent to town on each returning grocery flight.

### *Weir Inspection and Cleaning*

Keeping the weir clean of debris and fish carcasses is essential maintenance. Weirs should be cleaned and inspected in the morning before radio schedule, throughout the day, and before retiring for the evening. A garden rake, pew, potato rake, or pitchfork can make this job easier. If the weir is not kept clean, resistance against the weir increases rapidly. Replacing a washed out weir is an enormous amount of work. Check sandbagged bottoms of weir at least once a day and more frequently during high water conditions, and frequent bear activity.

### *Passing Fish Through the Weir*

Do not hold up large numbers of fish behind the weir – if there is a school of fish attempting to get through the weir, your priority is to count them through. All weir-counting gates should be set up to regulate the amount of fish flow through the gate. This can be done with a wooden wedge that is used to set the gate opening to a specific height. The gate opening should be set so that an individual can maintain identification and accuracy of fish passing through the gate. Do not open the gate to the degree that you cannot keep up with identification of fish and the accuracy of counts. For large volumes of fish a four to six inch opening is adequate to slow the flow. When low numbers of fish are present gates can be opened to a greater degree.

### *Firearms*

All state employees must be able to safely use firearms. A state owned rifle or shotgun will be provided at each camp. Educational training pertinent to the safe handling of firearms as well as shooting practice will be conducted for all personnel. Personal firearms are allowed with prior approval from the project supervisor. Loaded guns (with a round in the chamber of the gun) are prohibited inside camp facilities. **Anyone handling a firearm should always treat it as if it were loaded.** Guns will be well maintained, cleaned, and oiled. Make certain that firearms are completely unloaded while doing so. Firearms will be stored on site in a location out of reach of the public. Any horseplay with, or misuse of, firearms will not be tolerated and may be cause for immediate dismissal. Always unload a firearm of all rounds/ammunition before entering a vessel or aircraft.

### *Bears*

Weirs attract bears, and many weir camps have high concentrations of them. Do not antagonize bears and make every attempt to coexist with bears. Each bear is a potential danger. Do not encourage bears to come near camp by leaving food or unburned garbage around. Make sure you burn trash completely. Weir staff is advised not to eat outdoors or bring dead fish or animal carcasses around the camp. Make an extreme effort to maintain a clean camp.

Do not shoot at a bear unless, in your best judgement, it is endangering someone's life or severely damaging personal or state property. Whenever trying to frighten a bear away by shooting, do not fire toward it, because you may inadvertently wound it.

If you are having problems with a particular bear around camp, notify the office, and personnel from Division of Wildlife Conservation will take care of the situation.

### *Garbage*

Burn all garbage to prevent bear problems and make sure to burn trash completely, (if not it will attract bears). **Do Not Burn When Windy or Dry.** The U.S. Fish and Wildlife Service prohibit garbage pits on the Refuge. Never start fires with fuel. Be sure all burn barrels have proper grates or covers. Keep grass and brush trimmed at least fifteen feet in diameter around the burn barrel to prevent grass fires caused by sparks. In addition to preventing grass fires it is usually best to burn trash early in the morning or late in the evening when wind is minimal. Never leave a fire unattended, and always have adequate fire extinguishing materials available.

Cut out both ends of tin cans; flatten the cans, pull paper labels off, add the crushed can and paper label to your burnables. Burning cans with your burnables eliminates residual food and odors that attract bears. Box up burnt cans and other non-burnables and send this trash on the return leg of the supply flight if space is available. All garbage, trash, empty cans, and bottles returning to town via airplane must be double bagged. Empty fuel containers should also be sent in as soon as possible on return grocery flights for immediate recycling. Maintain a slop bucket for biodegradable garbage (food scraps, etc.). Don't compost biodegradable food because it attracts bears.

### *Fire and First Aid Safety*

The crew leader is responsible to ensure an adequate complete first aid kit and fully charged operable fire extinguishers are in camp, and that all personnel know their location and how to use them.

All field personnel are required to be current on CPR and first aid prior to going in the field. This is the employee's responsibility. All crewmembers need to be familiar with the camp's first aid kit and be sure items are replaced as needed or when beyond expiration dates.

### *Drinking Water*

Stream and lake water are probably contaminated with bacteria or parasites. Micron water filters are provided in all field camps. Filter all drinking water. If filter cartridges are damaged replace them immediately. Prior to replacement of filters take time to avoid intestinal parasites carried by beaver, otter, etc. by boiling your drinking water.

### *Boating and ATVs*

Boats and All Terrain Vehicles (ATVs) are for official work related use; they are not to be used for personal use, pleasure, or recreational purposes. It is strictly against policy to transport anyone other than state employees. Boats and ATVs are to be accessed and operated only by

trained personnel and will be secured when not in use. It is imperative that only state employees have access to operation of boats and or ATVs. Be safety conscious, use common sense, and do not speed.

Do not endanger your life or property by going out on a boat in dangerously rough water. If you are unfamiliar with marine safety, ask your supervisor for information or advice. All personnel must wear Personal Flotation Devices (life jacket, float coat or mustang suit) at all times when operating boats. Use your head – if you suspect it may be dangerously rough, don't go out on the water.

A waterproof EPIRB, a tool kit that includes wrenches, pliers, screw drivers, spare spark plugs, spark plug wrench, extra propeller, shear and cotter pins (if applicable), and flare kit must be in the boat or raft at all times. If you must travel at night carry a flashlight. Strokes are available for field use and should be in the boat when traveling. Know how to operate your EPIRB, and check the battery

Some camps are furnished with a 4-wheel ATV. The following safety precautions shall be observed at all times regarding department ATVs:

- Only employees of the state may use the vehicles.
- Only one employee should ride on the vehicle at a time.
- The safety helmet provided must always be worn during operation of an ATV.

Boats and ATVs have been provided to transport materials, supplies and equipment between campsites and supply planes or vessels. In addition they may be used for transportation to and from assigned duties in the field, such as surveys, monitoring a fishery, or collecting harvest information.

Unauthorized use of an ATV or boat will result in a notation on your evaluation, the loss of use of the ATV or boat at your field station, or your dismissal from work. Remember; an ATV or boat is a convenience, not a necessity.

### ***Personal Gear and Pets***

Generally 100 lbs. is the maximum amount for personal gear. If you anticipate bringing more than 100 lbs. to field camp, check with your supervisor first. Transportation charges for excess baggage will be the employee's responsibility.

Pets are not allowed in ADF&G field camps. Please find alternate arrangements for housing and care of your pet prior to reporting for duty.

### ***Maintenance and Cleanliness of Cabins and Outbuildings***

Cabin and facility maintenance is an important aspect of being able to accomplish objectives comfortably. Maintenance can usually be accomplished during slow periods of fish migration. After the camp is established make a list of projects that need to be accomplished. Send in a list of materials needed for these jobs. Also, try to anticipate problems before they occur. Ordering replacement materials and parts before a deteriorating piece of building or equipment actually breaks will prevent long delays in repair, due to the logistics involved.

Crews will be using these camp facilities for many years to come. It is important that repairs and maintenance be scheduled on days when fish migrations are slow to keep the buildings structurally sound and safe. Order supplies in advance, especially lumber, as it may take a certain plane or helicopter to transport the supplies to the field camp. If you notice needed repairs that may prevent injury or accident in your camp, report these immediately along with a list of required materials for repair. Don't wait until the end of the season for this type of construction or repair.

Keep the cabin, surrounding area, and yourselves clean, organized and safe. Appearance is important. The public perceives you as a representative of the Alaska Department of Fish and Game. Visitors' impressions are often based on your appearance, the appearance of your camp and how well it is maintained. You will not always be notified of the intended arrival of visitors, officials, supervisors, etc.

### ***Compliance with ADF&G Regulations***

All employees are responsible for complying with local subsistence, sport fishing, and hunting regulations. Copies of State and Federal regulations will be available to all field camps. Any violation will be recorded on your evaluation and may be cause for immediate dismissal.

### ***Basic Procedures Regarding Violations***

Most ADF&G field personnel are not enforcement officers, but do have a responsibility for being aware of and reporting any violations of state or federal law. The following is not intended as an all-inclusive procedure for handling violations of ADF&G regulations, but rather as a guideline for obtaining the appropriate information, and/or evidence to prove that a violation has been committed. The importance of being familiar with the commercial fishing, subsistence fishing, sport fishing and hunting regulations cannot be overemphasized. If a violation is noted, all pertinent information pertaining to the violation should be recorded immediately, retained by the employee, and the project leader must be notified. Violation reporting procedures are printed on the back cover of the commercial fishing regulation book. A copy of each regulation book should be available in each camp. Request the regulations from your supervisor if necessary.

The use of the following 5 Ws can simplify and aid in obtaining sufficient information pertaining to a violation.

1. What is the violation?

2. When did the violation take place (date and time, plus weather and tide condition, etc.)?
3. Where did the violation occur (if names are not available, provide a complete description of the people involved)?
4. Who is in violation and who are the witnesses?
5. Why was the violation committed?

It is important to interview all witnesses to a violation. Record all statements pertaining to the violation along with witnesses' names and addresses. If you have a camera, record as much as possible on film. Always carry your camera if you suspect you may encounter a violation. Do not attempt to arrest anyone for violation of ADF&G regulations. Simply collect as much information and evidence as possible and contact your supervisor or a State Trooper from the Division of Fish and Wildlife Protection as soon as possible.

Employees without enforcement authority are somewhat restricted as to how far they can go in obtaining information and evidence surrounding a known violation. If a person found in a violation refuses to cooperate with an employee without enforcement authority, no action should be taken, other than to relay all information and evidence collected to an officer (Fish and Wildlife Protection Division) as soon as possible. Employees with enforcement authority will contact the individual(s) involved and at that time issue a citation if appropriate.

### *Emergencies*

In the event of an emergency, administer first aid to stabilize the situation. Try to contact ADF&G on SSB radio frequency 3.230 MHz to state the nature of the emergency and what type of assistance you will require. If you are unable to reach anyone on 3.230 MHz, try 2.450 MHz or 4.125 MHz. If your camp has a CB or handheld VHF radio, you may be able to contact nearby villages, air charter operators, lodges or fishers. Channel 6 or 16 are generally monitored by most fishing vessels. If an injury is very serious or life threatening; immediately notify the U.S. Coast Guard directly on 4.125 MHz on your SSB field radio. The Kodiak Fish and Game number is 486-1830. Home phone numbers for supervisors/project leaders are Kevin Brennan 486-6475; Dennis Gretsche 487-4088; and Jeff Wadle 481-2974. Stay calm and in control.

If SSB radio contact is made with the U.S. Coast Guard, have the following information ready to pass along.

- Location of your field camp or specific location of the emergency. This includes latitude and longitude.
- Name and phone number of supervisor.
- General nature of the medical emergency.
- Specific information regarding the patient (name, age, primary complaint, and vital signs).
- Your assessment and treatment.
- Wind and weather conditions
- Other information pertinent to a possible medical evacuation.

## WEIR CAMPS

The main objective of the all weir projects is to record the number of salmon escaping into the system. Large numbers of fish (>200) should not be allowed to stage behind the weir. If large numbers of fish start to accumulate behind the weir, the gate should be opened and the fish counted through.

A sockeye salmon less than 16 inches (400 mm) in length (mid eye to tail fork) is considered a jack. Sockeye jacks will be included with the total sockeye enumeration, but will also be recorded separately for percentage evaluation. Use the escapement form provided to record the escapement data (Figure 2). Total daily counts and cumulative seasonal counts for each species will be relayed to Kodiak during the normal morning radio schedule at 0800 hour.

**KARLUK WEIR** is approximately 331' long, located about 1/8 mile upstream from the confluence of Karluk River and Karluk Lagoon on the southwest side of Kodiak Island (Figure 1). The weir was first constructed in 1921 at its current lagoon location and was active in this location annually until 1941 and again after 1976. The weir was moved from the lagoon location to the "portage" west of Larsen Bay from 1942-1945 and then to the outlet of Karluk Lake between 1946-1975. It is currently operated by two to four Division of Commercial Fisheries (CF) employees from mid May to late September along with one Division of Sport Fish (SF) employee from mid May to mid July (Brodie 2001).

### Opening Camp

- All equipment and tools for the Karluk weir are stored in the ADF&G warehouse. Make sure hex wrenches for rack master connector joints are in your toolbox!
- Weir personnel will need to be transported to Karluk Lodge by air charter to obtain the survey skiff and transport canoe. The air charter should then transport one crewmember to the upper lagoon to unload gear and supplies. All gear and supplies are then moved to the cabin and weir site with the canoe.
- Follow guidelines for opening the camp listed in Table 1. Make sure you have your toolbox.
- SSB antenna placement is located between a post near the banya and a post-located near front of the cabin.
- Living quarters is a two level, 16' x 20', cabin with two propane connections for refrigerator and propane lights.
- There is no water supply to the cabin. Water is obtained from the river and filtered.
- A twin, 12-volt battery bank hooked to and charged by a solar panel with photovoltaic regulator, powers SSB and VHF radios.
- Fuels needed for this camp include propane, #1 heating oil, gasoline and two-cycle oil for the survey boat, and 10W-30 motor oil for the generator.
- Banya and outhouse are located in close proximity to the cabin. Wood for heating the banya is obtained from the beach at the outlet of Karluk Lagoon.
- The stairway from the edge of the bluff to riverbank needs to be repaired and installed each spring. The stairway is stored behind the cabin.

## **Weir Installation**

- The 2002 weir will be placed in the same location as in 2001, directly in front of the cabin. The Karluk weir is a hybrid weir combining the structural engineering of both rack master and conventional wooden tripod weirs. Boardwalk for the weir is 2"x 12"x 14' and is staged between the cabin and banya. Toenail boardwalk sections together with duplex nails then secure to monopods with seine twine. All weir panels are staged adjacent to the cabin. Rack master pipe and connector joints in 2001 were divided; with half staged next to the cabin and the other half across the river, high above the riverbank. This weir utilizes 32 tripods. Twelve tripods are staged across the river and the remainder staged adjacent to the cabin.
- Weight tripods down with large rocks from the riverbed.
- Install at least eight to ten counting gates accompanied by flash panels.
- Secure upper portion of panels to upper stringer with seine twine.
- Install adult sampling trap.
- Install steelhead outmigration trap.

## **Weir Maintenance**

- The weir is cleaned and inspected for scouring and holes every morning and evening and cleaned throughout the day as necessary.
- The debris load is usually heavy after medium to heavy rainfall, and may increase later in the season especially on predominant pink salmon years. Historically the pink salmon run in even-numbered years is very large. After spawning, large numbers of dead salmon wash down onto the weir. During even-numbered years the weir may need to be cleaned every two to four hours, around the clock. Large amounts of river grass also build up on the weir throughout the season during heavy rains and high winds.
- Consider pulling weir panels during high water when the water in the river begins to cloud up, when debris build-up increases significantly and when the water level covers the indicator rock located 10 yards upstream of the weir.

## **Miscellaneous**

- Install "No Sport Fishing" regulatory markers 100 yards upstream and downstream from the weir.
- Make repairs, and maintain buildings and grounds surrounding the cabin and banya. Trim the grass along the trail to the boat landing, and at seasons end, cut a trail and an area large enough to stage tripods behind the banya.
- Repair and or maintain survey boat and canoe. During the season the survey boat is moored at the head of the lagoon. At the end of the season the skiff and canoe are stored again at Karluk Lodge. Outboard motor is returned to the ADF&G warehouse in Kodiak. Make sure to winterize and fog the engine before storage.
- Conduct surveys of the lagoon and river daily.
- All tools, gear and equipment are returned to Kodiak and stored in the warehouse.
- Remove all food from the cabin at the end of the season.



- Follow the guidelines listed in Appendix C for weir removal procedures and Table 3 for closing camp.
- Remove all hex head setscrews from the rackmaster joints after the weir is removed, and place in a container filled with oil.
- Clean and lime outhouse on a regular basis.

**AYAKULIK WEIR** is approximately 190' long and since 1970 has been located about 1/8 mile upstream from the confluence of the Ayakulik River and the Shelikof Strait on the southwest side of Kodiak Island (Figure 1). A weir was originally constructed on the Ayakulik River in 1929 at the outlet of Red Lake and operated at that location until 1969. The weir is currently operated by two to three CF employees, from late May to early September and one SF employee from late May through mid July (Brodie 2001).

### **Opening Camp**

- Some tools and equipment for the Ayakulik camp are stored at the ADF&G warehouse in Kodiak. Make sure bring along the cordless Makita drill, you will need it.
- You will need keys to the cabin, a claw hammer and an adjustable wrench. The basement to the cabin is locked and nailed shut. The basement must be opened first to obtain a ladder to reach the window on the northeast corner of the cabin. This window board has two padlocks and two lag bolts that need to be removed. Once the window boards are removed plug the bolt holes with tissue paper to keep the mosquitoes out.
- Follow the guidelines for opening the camp listed in Table 1.
- Living quarters consist of a one level, 16' x 20', single room cabin with half basement and an attached woodshed. The cabin has four bunks, a small refrigerator, a propane cook stove, a gravity fed water system, a wood heating stove, propane lights and 12-volt lights.
- The banya and outhouse are located adjacent to the cabin. Firewood for heating the cabin and banya is obtained from the beach.
- Water for the gravity fed water system is obtained from the river and hauled to a 55-gallon drum that supplies the kitchen sink. In addition there is a fish tote and a drum to catch rainwater off the roof.
- The cabin has a 12-volt battery bank, consisting of three batteries that are charged by a solar panel permanently attached to the roof. This 12-volt system powers the SSB radio and VHF base station.
- Two propane connections are located in the basement for propane lights, refrigerator and cook stove.
- The SSB radio antenna coaxial connector is attached to a 2" x 4" on the roof with antenna poles at the southwest and northwest corners of the property. Each pole is equipped with a pulley system.
- Fuels required at this camp consist of gasoline and propane.
- Check the land lease before moving any structures, making any additions to the cabin, or relocating the weir if necessary.

## **Weir Installation**

- Follow the guidelines for weir installations outlined in Appendix A.
- In 2002, the weir will be placed in approximately the same location as in 2001, directly behind and adjacent to the cabin. The riverbanks are staked indicating the location of the weir. The Ayakulik weir is a hybrid, wooden tripod and stringer weir with a PVC boat gate. It utilizes 21 tripods. All boardwalk and 4" x 4" stringers are staged on a wood rack adjacent to the cabin. A 20' raft gate (modified floating weir panel) is stored on the far bank of the river, above high water mark on a natural bench. Half of the tripods, weir panels and full sandbags are staged on the far riverbank and the other half are staged between the banya and cabin.
- Weight each tripod with at least six to eight sandbags.
- Install four counting gates accompanied by flash panels and one fish trap gate.
- Secure the upper portion of the weir panels to the upper stringers with seine twine.
- Install the six panel "Scott" sampling trap one-third of the distance from the bank nearest the cabin and use the extra-wide counting gate.
- Install the steelhead outmigration trap.
- Install the raft gate.
- Rafters can use the boat gate or portage around the far end of the weir.

## **Weir Maintenance**

- The weir is cleaned and inspected for scouring and holes every morning and evening, and cleaned throughout the day, as necessary.
- The debris load is usually heavy after medium to heavy rainfall.
- Consider pulling the weir panels when you see standing water in the yard and when water in the river begins to cloud up. An indicator rock is located 150 yards downstream from the weir. When the water level covers this rock you should reevaluate the situation and consider pulling panels.
- The furthest one-third section of the weir from the cabin tends to scour out; double sandbagging this section should alleviate the problem.

## **Miscellaneous**

- Install "No Sport Fishing" regulatory markers 100 yards upstream and downstream from the weir.
- Make repairs and maintain buildings and grounds surrounding the cabin and banya. Trim grass around buildings, the trail to weir, to the boat landing at the lagoon and clear an area at the far end of the weir for rafters portaging rafts, to see bears approaching the weir, and for ease of moving tripods when the weir is removed.
- Clean and lime the outhouse on a regular basis.
- Repair and maintain the survey boat. Make sure to winterize and fog the engine before storage.
- Conduct salmon surveys of lagoon and bay once or twice daily depending on the tides.
- All tools, generator, ladder, the old outboard motor, and fuels are stored in the basement; the remaining equipment including power tools, new outboard motor (if on site), and chain saw are

returned to Kodiak and stored in the warehouse. No food or paper items should be stored in the basement to avoid problems with animals.

- Remove all food from the cabin at the end of the season.
- The survey/work boat is stored next to the cabin with four to six full sandbags on top. The outboard motor is stored in the basement. During the season the boat is anchored on the shore of the lagoon next to the trail.
- The salmon survey technique is to walk the beach side of the river from the mouth to the first lodge. The prime time to survey is three hours after low tide. Typically fish move in with the rising tide then arrive at the weir three to five hours after low tide.
- Grocery and supply flights land adjacent to the lodge in the lagoon, and sometimes on the beach.
- Follow guidelines listed in Appendix C for weir removal procedures and Table 3 for closing camp.
- For specific policies and guidelines pertinent to this camp obtain a copy of the lease agreement from the project supervisor.
- The twelve-volt battery bank remains connected to the solar panel at the end of the season.
- Window boards are attached with carriage bolts and the nuts are attached from the inside. You must exit the cabin through the window on the northeast corner. This window must be left open one half inch because it locks from the inside. The board covering this window is attached with two padlocks and two lag bolts.
- At the end of the season return the shotgun, SSB radio and antenna, spotting scope and tripod, first aid kit, cordless drill, handheld VHF, and logbooks back to Kodiak. Dispose of all perishable food. Burn all trash and haul all non-burnable back in on flight to town.
- This camp has a fair number of bears that frequent the weir. Do not let them loiter around the camp and weir!

**UPPER STATION WEIR** is approximately 35' long, located near the outlet of Olga Creek at its confluence with Olga Bay, on the south end of Kodiak Island (Figure 1). The weir was first installed in 1929 just above its current location and was operated there until 1969. From 1969-1992 the weir was operated near the outlet of lower Olga Lake (Upper Station) then moved to its current location in 1993. Two CF employees operate the weir from late May to mid September (Brodie 2001).

### **Opening Camp**

- Obtain keys to the cabin and the combination to one lock from the project supervisor before departing for this camp. You will also need a cordless drill, and square-head bit to remove window-board-screws
- The air charter will transport personnel to Olga Bay. Personnel will then need to cross the creek in chestwaders and install the footbridge across the creek to move gear and supplies to the cabin. The footbridge consists of one tripod placed in the middle of the creek and running a section of boardwalk to each bank of the river
- Follow guidelines for opening the camp listed in Table 1.
- Living quarters consist of a one level, 14' x 24', cabin with two bedrooms, propane connections for a refrigerator, cook stove and propane lights. The cabin is wired to operate

110-volt AC powered lights when connected to the generator. An oil stove heats the cabin. This cabin has an attached entryway with additional storage space for tools. There is also a small shed adjacent to the cabin to store fuel, the lawn mower and weed trimmer.

- The master fuse for the 12-volt solar system needs to be installed prior to operation. You also must open the ball valve on the fuel drum located at the rear of the cabin that supplies the oil for the stove.
- The generator, weed trimmer, hand-tools and lawnmower are stored on site. The generator is stored in the attic.
- SSB antenna is strung running north to south on the eastside of cabin between two 4" x 4" posts. The VHF antenna is attached on the west peak of the cabin.
- SSB radio, VHF and two 12-volt lights are powered by a bank of three 12-volt batteries located at the rear of the cabin, connected to a permanently mounted solar panel on the roof of the cabin.
- Two propane connections for the refrigerator, cook stove, and propane lights are located under the rear of the cabin.
- Rainwater from the roof collects in plastic garbage cans and feeds the gravity fed water system to the kitchen sink. There is also a filtration container on site for drinking water.
- Fuels needed for this camp include propane, #1 heating oil, gasoline and two-cycle oil for an inflatable raft used to conduct salmon surveys when weather conditions are conducive.

### **Weir Installation**

- Follow the guidelines for weir installations outlined in Appendix A.
- The 2002 weir will be placed in the same location as in 2001. The weir is located northwest of the cabin, and downstream approximately 225 yards. There is a boardwalk from the cabin leading to the weir.
- Tripods for the weir are staged adjacent to the cabin. The tripods are floated downstream to the weir site, and returned to the staging location at the end of the season by tilting them into a metal boat and motoring them back upstream for winter storage.
- The weir is a conventional wooden tripod and stringer style and utilizes three tripods, one counting gate, and one sampling trap gate. Tripods are roughly spaced eleven feet apart.
- Weir materials, other than the tripods, are staged on the bluff just above the weir site.
- The riverbank on the northwest end of the weir needs to be sandbagged from the weir approximately seven feet upstream and approximately five feet above the water line. This bank is unstable pea gravel and, if not sandbagged, will scour out around the weir.
- Install the "Scott" sampling trap on the bluff side of the creek, reasonably close to the creek bank.
- Secure the upper portion of the weir panels to the upper stringers with seine twine.
- A raft gate is not necessary at this camp.

## **Weir Maintenance**

- The weir is cleaned and inspected for scouring and holes every morning and evening and cleaned throughout the day as necessary.
- Debris load can be heavy after medium to heavy rainfall, and after high easterly winds when large amounts of river and lake grass may build up on this weir.
- Consider pulling weir panels during high water, when the water in the river begins to cloud up, when debris build-up increases significantly, and when the water level covers the adult salmon trap.

## **Miscellaneous**

- Install “No Sport Fishing” regulatory markers 100 yards upstream and downstream from the weir.
- This camp does not have a banya but does have a shower stall with a shower bag.
- Make repairs; maintain buildings and grounds surrounding the cabin. Trim the grass around the buildings; along the trail to the weir, and footbridge. At the end of the season cut an area between the outhouse and footbridge for ease of staging tripods.
- Repair and maintain the inflatable raft. The raft is moored behind the weir, tied up to the weir or on the beach near the footbridge, during the season. At the end of the season the raft and outboard motor return to the ADF&G warehouse in Kodiak. Make sure to winterize and fog the engine before storing for the winter.
- Conduct a visual survey of the bay daily. It is normally adequate to survey from the shore with binoculars viewing east towards Stintz Bluff and west toward Hook Point. If the raft is used for a bay survey only take it out on good weather days!
- All tools and the generator are stored in the cabin at season’s end. Fuels are stored in the fuel shed, the remaining gear and equipment is returned to Kodiak and are stored in the warehouse.
- Dispose the contents of your slop bucket in the bay and burn trash in the burn barrel on the beach. Back-haul non-burnables to town on returning flights.
- Clean and lime the outhouse on a regular basis. The outhouse hole tends to fill with water at this site no matter where you dig a new hole.
- Remove all biodegradable food from the cabin at the end of the season.
- The aluminum workboat is stored next to the tripods after they are staged at the end of the season.
- Conduct salmon surveys several times per day. The best technique is to walk the beach side of the river from the mouth to the weir. The prime time to survey is 8:00 AM, 10:00 AM and 6:00 to 8:00 PM.
- Grocery and supply flights are normally unloaded on the beach near the footbridge, unless weather conditions force the plane to land at lower Olga Lake. Supplies are transported in a wheelbarrow to the camp.
- For specific policies and guidelines pertaining to this camp obtain a copy of the lease agreement from the project supervisor. Before any additional building projects are started, obtain prior approval from your project supervisor and the property owners.

- Follow guidelines listed in Appendix C for weir removal procedures and Table 3 for closing camp.
- The 12-volt battery bank remains connected to solar panel at the end of the season.
- Window boards are attached with square head screws.
- At season's end return the shotgun, SSB antenna, spotting scope and tripod, first aid kit, cordless drill, handheld VHF, and logbooks back to Kodiak. Dispose of all perishable food in the bay. Burn all trash and haul all non-burnables to town or on return flights.
- Winterize all motorized equipment stored on site at the end of the season.
- Clean the rain barrels and water filter at season's end.
- Turn the valve off on the oil barrel supplying the heating stove and remove the 12-volt system main fuse at end of season.

**DOG SALMON WEIR** consists of three weirs, their lengths being 125', 135' and 25' on three branches of the Dog Salmon River, that drains from Frazer Lake on the south end of Kodiak Island into Olga Bay (Figure 1). First constructed in 1983, the weirs are operated by two CF employees from early June to early September (Brodie 2001). This camp has a dense population of brown bears.

### **Opening Camp**

- If arrival time is during high tide in Olga Bay, the air charter can taxi into the river, drop personnel and supplies on the bank of the east river branch upstream near the trailhead close to the signpost. If arrival time is not coordinated at high tide, you have two other options. One is to be flown to the closest setnet site (Bill Barker), or the other option is the beach in Talifson's Cove, just east of Dog Salmon. If you land at Barker's site they will transport you to the weir site, then you will have to launch the small skiff on site and shuttle your gear from Barker's to the weir site. If a landing is made in Talifson's Cove, stage your gear above high tide line, hike to the weir site, launch the small skiff and begin shuttling gear.
- All tools and motorized equipment are normally stored on site. Make sure, before departing for camp, to obtain keys for the cabin, shed, West River shed, and the lock securing the Lund skiff, from the project supervisor.
- Follow guidelines for opening the camp listed in Table 1.
- Living quarters consist of a 16' x 20' two bedroom cabin with a mudroom entry and a storage and equipment shed attached at the rear. There is also an outbuilding that serves as a bunkhouse and banya. The bunkroom has two bunks. A wood burning barrel stove heats the banya. Wood used for burning is obtained from dead trees on site or wood collected on the weir throughout the season. There is also a shed located at the west weir site that stores necessary equipment and tools associated with that particular weir. The main cabin has an oil stove fueled by #1 heating oil. The main cabin has propane lights as well as 12-volt lights, and is wired for 110-volt service by connecting to the generator shed located behind the main cabin.
- The bunkhouse/banya building has a fair amount of gear stored in it that will need to be removed at the beginning of the season. The lawn mower and wheelbarrow are stored under the front of the main cabin during the season.
- The SSB antenna is usually left up at this site and runs parallel to the East Side of the cabin.

- A 12-volt battery bank located on the east deck of the cabin, powers the SSB and VHF radios, the refrigerator starter, and 12-volt lights. This battery bank is charged by three solar panels permanently mounted to the roof.
- Water supply to the cabin is a gravity fed system, with water pumped in or collected from the rain water into a storage tank that supplies the kitchen sink. There is also a water filtration system on site.
- Window shutters are attached with wing nuts screwed to hangar bolts; when removed store the shutters under the southwest corner of the cabin. There is a small wood box in the equipment shed used to store all wing nuts and screws until they are needed again when camp is closed. A cordless drill is needed to remove shutters, and is stored in the shed attached to the cabin.
- Steps for accessing the rear deck of the cabin and the banya need to be attached to hanger bolts already in place, and secured with wing nuts. Steps that access the front deck of the cabin need to be lowered to the ground.
- There are three propane connections with regulators located on the west side of the cabin. Each hookup is stored under the cabin on shelving, between floor joists. One hookup is for propane lights in the bedrooms, one is for propane lights in the main room, and the last hookup is for the refrigerator and cook stove.
- The 12-volt water pump stored in the equipment shed needs to be hooked up in a protective box inside the woodshed attached to the banya, as well as installing and hooking the waterline running from the river to the pump.
- Fuels needed for this camp include propane, #1 heating oil, gasoline, and two-cycle oil for the survey boat.

## **Weir Installation**

- Follow guidelines for weir installations outlined in Appendix A.
- The 2002 weirs will be placed in the same locations as the 2001 weirs. The east weir is located adjacent to the cabin. The west and far west weirs are approximately one-quarter of a mile from the cabin, with trails leading to each weir.
- Pipes and deadmans are set in the riverbanks for running cables across the rivers to help install the weirs. The Dog Salmon weirs are of the wooden tripod and stringer type, and utilize a total of 22 tripods. The east weir uses ten tripods spaced 11'6" apart; the west uses eleven tripods spaced 10' - 10' 5" apart and the far-west weir has only one tripod placed in the middle of the creek. All boardwalks and 4" x 4" stringers for the east and west weirs are staged on platforms adjacent to the respective weir sites. Half of the tripods, weir panels, and full sandbags are staged on either side of the river at the east and west weir sites. The far-west weir materials are staged adjacent to its location. Weight each tripod with seven to eight full sandbags.
- Install four counting gates accompanied by flash panels at both the east and west weirs. Only one counting gate is installed at the far-west weir.
- Secure the upper portion of the weir panels to the upper stringers with seine twine.
- Install the steelhead out-migration trap on the west weir.
- No raft gates are needed on these weirs.

## **Weir Maintenance**

- The weir is cleaned and inspected for scouring and holes every morning before radio schedule and throughout the day. This camp has a high number of bears that may damage the weirs; therefore the weirs must be inspected frequently for damage, scouring, and holes.
- Debris load can be heavy after medium to heavy rainfall, or high winds, when large amounts of sticks, branches, logs, and leaves may come downstream.
- Consider pulling weir panels during high water when the water in the river begins to cloud up, when debris build-up increases significantly, or when the water level rises two-thirds of the way up the indicator rock located just behind the west weir.
- The gravel and rock in the riverbed at the east weir tends to scour under panels, therefore make sure panels are entrenched well when this weir is installed.

## **Miscellaneous**

- Duties at this camp include enumerating salmon, maintaining buildings and grounds, conducting daily salmon surveys, completing emergency transfer paper work for permit holders, assisting two other field camps in the district, and conducting stream surveys on seven local streams.
- Install "No Sport Fishing" regulatory markers 100 yards upstream and downstream from the weirs.
- Make repairs, maintain buildings and grounds surrounding the cabin and banya. Trim grass around buildings, along trails to weirs, to the upper and lower boat landings, around the burn pit, and across the east weir to allow you to see bears approaching.
- Maintain and make repairs on two boats. This camp is equipped with a 22-foot aluminum boat that is used for surveys, transporting and moving personnel and supplies to other field camps. This 22-foot boat is moored offshore at the edge of the Dog Salmon Flats or to the east of the camp in Iversons Cove. The second boat is a 16-foot Lund that is moored in the river either at the upper or lower skiff landings, depending on the water level in the river. At the end of the season, the large skiff is transported back to Kodiak, by tender, and the smaller skiff is stored on site where it is chained and locked to a cottonwood tree next to the east weir materials staging platform. The outboard motor for the smaller boat is stored in the equipment shed. Make sure to winterize and fog the engine before storing for the winter.
- Fuel for boats, generator and motorized equipment as well as propane and #1 heating oil are purchased from the Wards Cove Packing tender operating in Olga Bay.
- Conduct morning surveys of the river branches daily as well as the Dog Salmon Flats Section and also conduct surveys throughout the day as required. It is a standard operating procedure to conduct a survey of the lower east river before the evening radio schedule between 7:00-7:30 PM.
- There is an established schedule to check the west and far-west weirs. The times are 1:00 PM, 3:00 PM, 5:00 PM, 7:00 PM, 9:00 PM and at times as late as 10:00 or 11:00 PM.
- Survey the lower East River, and the Dog Salmon Flats section with the small skiff. The West River is surveyed by viewing from the west weir, as well as walking the west riverbank. The prime time to survey is three hours after low tide. Typically, fish move into the river on low tide and tend to move up to the weir on high tide.



- Biodegradables from the slop bucket are dumped in the bay.
- Grocery and supply flights land in the bay on the Dog Salmon Flats. The smaller boat is used to meet the chartered flight and to transport groceries and supplies to the upper boat landing.
- All tools, the generator, the outboard motor for the smaller boat, ladders and fuels are stored on site; the remaining gear and equipment are returned to Kodiak and are stored in the warehouse.
- Remove all perishable food from cabin at the end of the season.
- For specific policies and guidelines pertinent to this camp obtain a copy of the lease agreement with the U.S. Fish and Wildlife Service from the project supervisor.
- The 12-volt battery bank remains connected to the solar panel at the end of the season.
- Window boards are attached with wing nuts and washers to hanger bolts mounted at each window.
- At the end of the season return the shotgun, first aid kit, handheld VHF, and logbooks back to Kodiak. Dispose of all perishable food in the bay. Burn all trash and haul all non-burnables back on return flights to town.
- This camp has a high number of bears that frequent the weir. Do not let them hang around! Establish early in the season that you are in control.
- Clean and lime the outhouse on a regular basis.
- Check and maintain the 12-volt battery bank.
- Weir tours are by appointment only.
- Follow guidelines listed in Appendix C for weir removal procedures and Table 3 for closing camp.

**LITNIK WEIR** is approximately 88' long, located about one half mile above Afognak Bay on the south end of Afognak Island, and has operated at this location since 1986 (Figure 1). A weir was first operated in 1921 at a site located approximately one quarter of a mile below the outlet of Afognak Lake, where intermittent weir counts have occurred throughout the years. In 1978 a new weir and tree house were constructed upriver of the current site, and was operated annually there through 1985. Two CF employees operate Litnik weir from late May to mid September (Brodie 2001).

### **Opening Camp**

- The majority of equipment and tools for the Litnik camp are at the ADF&G warehouse stored in Kodiak.
- Four wheel ATV and trailer are also stored at the warehouse.
- Equipment, supplies and the ATV are transported to this camp via the state research vessel K-HI-C.
- Offload equipment, supplies and ATV from the K-HI-C to shore with a skiff. Then move all equipment, supplies, etc. to the cabin and weir site with the ATV and trailer.
- Follow guidelines for opening the camp listed in Table 1.
- Some tools are stored in the small cabin attic. The small cabin is located behind the main cabin.
- SSB antenna is strung up between the small cabin and the clothesline post. Coax runs along the cabin and into the main cabin through a hole in the wall, to the radio table.

- There are two propane hookups for the main cabin. One is located beneath the front porch and the second under the cabin directly under the location of the fridge. The rear cabin has one propane hookup for propane lights located along the north side.
- Living quarters include a main cabin, 14' x 16', and a smaller one-room cabin located directly behind the main cabin. The main cabin has a refrigerator, and cookstove. These cabins are not typically locked up at the end of the season. Employees of the landowners, Afognak Native Corporation may use this cabin after ADF&G crew departs in September.
- This weir site does not have a banya but does have a shower stall and water bag.
- Water supply is obtained from the river and filtered for drinking.
- The SSB radio is powered by a 12-volt battery and is charged by a solar panel. The solar panel needs to be brought from town at the beginning of the season.
- Fuels needed at this camp include propane, gasoline for the boat, and two-cycle oil for gas mix on outboard engines.

### **Weir Installation**

- The 2002 weir will be placed in the same location as in 2001, directly in front and adjacent to the main cabin.
- Follow guidelines for weir installations outlined in Appendix A.
- The weir is a wooden tripod weir with the exception of utilizing aluminum pipes as upper and lower stringers.
- Tripods for the weir are staged next to the cabin.
- Remaining weir materials for weir installation are stored divided on either side of the river.
- This weir uses 10 to 11 tripods. Each tripod should be weighted down with three to five large rocks from the river bottom.
- Install a "Scott" adult salmon trap to sample fish. It is installed approximately 15 feet from the bank closest to the main cabin.
- Only one counting gate is installed on this weir.
- Secure the upper portion of the weir panels to the upper stringers with seine twine.
- No raft gate is installed on this weir.

### **Weir Maintenance**

- The weir is cleaned and inspected for scouring and holes every morning and throughout the day, as necessary.
- The debris load tends to be light at this weir. Major debris may develop later in the season, and consists of spawned out pink salmon carcasses.
- Consider pulling weir panels when the water in the river begins to cloud up, when debris build-up increases significantly, and when the water level covers the adult salmon trap.

## Miscellaneous

- Install “No Sport Fishing” regulatory markers 100 yards upstream and downstream from the weir.
- This weir resists scouring well because the river substrate consists of large rocks. Personnel working this weir still need to inspect the weir daily for scouring and holes.
- Clean and lime the outhouse regularly.
- Routinely trim and cut grass around buildings and on the trail to the weir.
- Maintain and make repairs to the 21-foot aluminum boat and outboard motors used at this camp.
- At the end of the season store the dishes, tools and miscellaneous equipment in the attics of the main cabin and smaller cabins.
- Biodegradables from the slop bucket are disposed of in the bay.
- Burn trash and burnables in the burn barrel and backhaul non-burnables to town.
- The crew typically purchases groceries for this camp when they come to Kodiak every two weeks with the 21-foot aluminum boat. After returning from Kodiak supplies and groceries are transported to the cabin using the four wheel ATV and trailer.
- Fuel for the boat is obtained during each trip into town. A 55-gallon barrel of boat fuel is also stored on site at the cabin.
- Install a running line in the river at the trailhead to the cabin.
- Conduct daily salmon surveys of the lower river and bay.
- The Afognak Native Corporation owns the land on which the cabin and weir site is located. Obtain a lease agreement from the project supervisor and abide by all terms within the lease agreement.
- Weir tours are by appointment only.
- Follow guidelines listed in Appendix C for weir removal procedures and Table 3 for closing camp.
- Typically when this weir is removed half of the materials are staged on either side of the river adjacent to the weir.

**AKALURA WEIR** is approximately 60' long, located about 1/8 mile upstream from Akalura Lagoon, on the south end of Kodiak Island (Figure 1). This project is a video weir cooperative plan with the U.S. Fish and Wildlife Service. Although not operated on a consistent annual basis, when operational, it is manned by one to two CF employees from late May to late September (Brodie 2001).

## Opening Camp

- Obtain keys to the cabin and a tool kit before departing for camp.
- Air charter will drop personnel off on the shore of Olga Bay in front of the old cannery site. Personnel will then move gear and supplies up to the cabin and weir site. A wheelbarrow located in one of the warehouses will make it easier to move gear to the cabin. There is a wooden boardwalk that extends from the old cannery to the cabin and weir site.
- Follow guidelines for opening camp listed in Table 1.

- Living quarters is a one room, 12' x 20' cabin with two bunks, two propane connections for a refrigerator and cook stove. Do not attempt to use the oven on the cook stove, it is inoperable. An oil stove heats the cabin and Coleman lanterns provide lighting. This cabin also has an entryway that provides a reasonable amount of storage space for tools and gear. There is also a small fuel, tool, and storage shed located adjacent to the cabin.
- Propane connections are located on the south and northwest sides of the cabin.
- SSB antenna is strung running northwest between two 4" X 4" posts.
- A 12-volt battery, charged by a solar panel, powers the SSB radio. The solar panel needs to be obtained from the ADF&G warehouse in Kodiak.
- There is no water supply to the cabin. Water is obtained from a small stream flowing next to the cabin and carried back indoors.
- Fuels needed for this camp include propane, #1 heating oil, and Coleman lantern fuel.
- The outhouse is located 20 yards behind the pine tree.

### **Weir Installation**

- Follow guidelines for weir installations outlined in Appendix A.
- The 2002 weir will be placed in the same location as in 2001. The weir is located approximately 75 yards north of the cabin. There is also a boardwalk to the weir.
- The weir is a wooden tripod style and utilizes six tripods, one counting gate, and one sampling trap gate. Tripods are roughly spaced 10 feet apart.
- Tripods for the weir are staged on either side of the creek at the weir location.
- Weir materials, including weir panels and lumber for weir construction, are located on the west side of the creek adjacent to the weir location.
- Install the "Scott" sampling trap on the east side of the creek, reasonably close to the creek bank.
- Secure the upper portion of the weir panels to the upper stringers with seine twine.
- A raft gate is not necessary at this camp.
- Sandbag the entire front of the weir at base of panels.

### **Weir Maintenance**

- The weir is cleaned and inspected for scouring and holes every morning before radio schedule, and throughout the day. Debris load tends to be light at this weir. Major debris may develop later in the season, and consists of spawned out pink salmon carcasses.
- Consider pulling weir panels when the water in the river begins to cloud up, when debris build-up increases significantly and when the water level covers the small flood plain on the west bank.
- This weir tends to scour under panels, therefore make sure panels are entrenched well when this weir is installed, and sandbag the entire front of the weir.

## Miscellaneous

- Install “No Sport Fishing” regulatory markers 100 yards upstream and downstream from the weir.
- Make repairs, maintain buildings and grounds surrounding the cabin. Trim grass around buildings, the boardwalk from the cannery to the cabin and weir, and an area west of the weir where tripods will be staged at the end of the season.
- All tools are stored in the cabin and fuels are stored in the fuel shed. All remaining gear and equipment are returned to Kodiak and stored in the warehouse.
- Remove all food from cabin at the end of the season.
- Follow guidelines listed in Appendix C for weir removal procedures and Table 3 for camp close up.
- Conduct salmon surveys of the creek, lagoon, and bay once or twice, each day depending on the tides.
- The salmon survey technique is to walk the bank of the creek to the lagoon. Next walk the boardwalk from the cabin to the cannery viewing the lagoon, and then walk the boardwalk in front of the cannery to the outlet of the lagoon observing the bay and lagoon outlet. The prime time for surveying is three hours after low tide. Typically fish move into the creek on low tide, and then move up the creek on high tide.
- Grocery and supply flights land in Olga Bay in front of the old cannery site.
- For specific policies and guidelines pertaining to this camp obtain a copy of the lease agreement from the project supervisor.
- The 12-volt battery and solar panel are returned to town at the end of the season.
- Window boards are attached with duplex nails.
- Dispose of biodegradables from the slop bucket into the bay and burn all trash in the burn barrel on site. Backhaul all non-burables to town on returning flights.
- There is no banya but a shower bag is provided at this camp.
- Clean and lime the outhouse on a regular basis.
- When tripods are removed from the creek and staged at the end of the season, place scrap plywood under each tripod leg to keep them from sinking into the ground.
- At the end of the season, return the shotgun, SSB antenna, first aid kit, handheld VHF, and logbooks back to town. Dispose of all perishable food in the river. Burn all trash and haul all non-burnable back in on flight to town.

**SALTARY WEIR** is approximately 120' long located about 1/4 mile below the outlet of Saltery Lake on the northeast side of Kodiak Island, where it has been installed annually since 1988 (Figure 1). During the first three years of operation (1985-1987) the weir was placed in several locations, approximately 1 1/2 miles downstream from the current location and closer to the lagoon. These sites were abandoned due to problems with shifting river substrate. One CF employee operates the weir from late June to early August. Kodiak Regional Aquaculture Association (KRAA) employees have operated this weir through mid September in past years, however this is not expected to occur in 2002. The general public frequents the weir and surrounding area (Brodie 2001).

## **Opening Camp**

- Weir personnel, supplies and gear will be transported to the Sallery weir site by charter plane. After weir personnel is on site a four wheel ATV will be driven out to the camp by office staff via the Sallery River road. The ATV will be used during the season to perform salmon surveys, and to obtain groceries and supplies delivered at the main road biweekly.
- Living accommodations at Sallery weir consist of a weatherport tent camp. The weatherport tent for this camp is stored in the trailer van adjacent to the ADF&G warehouse.
- All tools and gear necessary for this camp are stored in the salmon management locker in the warehouse. Make sure you take a shovel, sledgehammer, hex key wrenches, toolbox, ATV and trailer.
- When you arrive, the first day should be spent erecting the weatherport, stringing up the SSB radio and antenna, coax, connecting propane to cook burner, and stowing all food, supplies, and gear. The weatherport is erected on a wooden deck platform.
- The SSB antenna is strung up adjacent to the weatherport running east to west attached to trees.
- The SSB radio is powered by a 12-volt battery and charged by a solar panel.
- Day two should be used to install the weir.
- There is one propane connection to the weatherport that is for the cook burner.
- Fuels needed at this camp are propane, blazo, and gasoline.
- Drinking water is carried from the river and filtered.

## **Weir Installation**

- The 2002 weir will be installed in the same location as in 2001. This location is east of the weatherport, and a path leads down to the site.
- The weir is a rackmaster type with three wooden tripods to strengthen the framework. Tripods are spaced approximately 12' apart, and are placed in the middle section of the weir where water pressure is the greatest. The boardwalk for the weir is made up of 2' x 12' x 12' planks toe nailed together and secured to rackmaster monopods with seine twine.
- Weight each tripod with seven to eight sandbags.
- Entrench all weir panels into the riverbed and then sandbag the base of all weir panels.
- Install one counting gate and one sampling trap gate. The sampling trap is a three-panel style trap.
- Install the flash panels
- Secure the upper portion of the weir panels to the upper stringers with seine twine.
- No raft gate is required on this weir.

## **Weir Maintenance**

- The weir is cleaned and inspected for scouring and holes every morning before radio schedule, and throughout the day. Debris load tends to be light at this weir but includes sticks, branches and lake weeds. Major debris occurs later in the season and consists of spawned out pink salmon carcasses.

- Consider pulling weir panels when water in the river begins to cloud up, when debris build-up increases significantly and when the water level rises approximately five to nine inches over the top of the sampling trap.
- Water level increases significantly after several days of heavy rain.
- This weir tends to scour under panels, therefore make sure panels are entrenched well when this weir is installed.

### **Miscellaneous**

- The public often frequents the Saltery weir site, the surrounding area, and trails on weekends. Public interaction and ATV use are high. It is extremely important that weir personnel maintain a respectable public profile and are knowledgeable of ADF&G laws and regulations.
- Install “No Sport Fishing” regulatory markers 100 yards upstream and downstream from the weir.
- If necessary the Saltery Lodge can charge the 12-volt battery.
- All rackmaster connector screws should be removed at the end of the season and placed in a sealed container with oil.
- Inspect the framework of the weir daily to ensure it is safe. Make repairs as necessary.
- No banya is on site but a shower bag is available.
- Clean and lime the outhouse on a regular basis.
- Dispose of all biodegradables from slop bucket into the river.
- Burn all burnable trash at the burn pit located 20 feet from the weatherport.
- Backhaul all non-burnables to the road when you to pick up groceries and supplies.
- Office personnel deliver groceries and supplies twice a month to the trailhead of the American River. Weir personnel will have to travel with the four wheel ATV and trailer to the trailhead for pick up.
- Stream surveys are conducted daily before radio schedule. Surveys are short, one-third to one-half mile surveys, and can be done from the bluff or walking in the stream. There are five large deep sections of the creek that should be viewed when surveying. The largest hole is the bedspring hole. It needs to be looked over carefully.
- Conduct bay surveys from the beach; access via ATV.
- Four to seven sport-fishing guides operate on the river.
- Follow guidelines listed in Appendix C for weir removal procedures and Table 3 for closing camp.
- Remove all weir panels and rackmaster framework and stage on the south bank a reasonable distance from the riverbank.
- At the end of the season, tripods are staged on either the north or south bank.
- All supplies and gear including the weatherport need to be removed from the site and transported to the ADF&G warehouse at the end of the season.
- Pack out all trash.
- The four wheel ATV needs to be cleaned, winterized, and stored at the ADF&G warehouse.

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Table 1. Chronology of opening camp, duties, and assignments.

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Upon arrival and reporting for duty, report to your supervisor and the personnel assistant. You will need to complete and sign return to duty paperwork. Begin organizing for an extended field season. Listed below is a recommended chronology of tasks to prepare yourself for field camp, to be accomplished in approximately two and one half days.

1. Compile a list of necessary gear, supplies, materials and groceries needed for field camp (See example, Appendix D).
2. Obtain necessary gear from the warehouse, label gear with your camp name and stage it in one location at warehouse. Do not block doors or work bays. Consult the warehouse manager or project supervisor as where to stage equipment.
3. Purchase gear, supplies, fuels, and materials not found at the warehouse with prior approval from the project supervisor, then label and stage at the warehouse.
4. Purchase two weeks supply of groceries and return all receipts from purchases to Joan Brodie.
5. Obtain all necessary keys and or combinations for ATV, boats, and cabin locks associated with your field project.
6. Weigh all gear and supplies. Aircraft have limited payloads.
7. Transport gear, supplies, materials and groceries to the air charter that will be flying you to field camp. Keep in mind that the aircraft transporting you has weight and space limitations. Therefore attempt to keep gear, supplies, groceries, and fuels in check.
8. Fly out to the field camp.
9. Arrive at the field camp and haul gear, supplies, fuels, and groceries to the field cabin.
10. Remove shutters/window boards covering windows, and stow them in an appropriate place for the entire season.
11. Open the cabin door and outbuildings; then store supplies and personal gear.
12. String up the SSB radio antenna; hook up SSB radio to antenna and 12-volt battery.
13. Hook the 12-volt battery to the solar panel.
14. Sweep out the cabin, and fill the oil stove with appropriate heating fuel.

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-Continued-

Table 1. (page 2 of 2)

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15. Hook up propane tanks to the appropriate regulators, start the refrigerator and light the pilot lights on the cook stove and oven. Make sure the propane lights are operable and replace mantles as needed
  16. Hook up the water supply tank and fill with water.
  17. Mount the outboard motor on the boat and launch the boat.
  18. Prepare for tomorrow's weir installation by gathering tools and equipment necessary to accomplish the job. Locate and organize all necessary reporting forms including weekly escapement and logbook.
  19. Begin your daily logbook, complete with a daily entry for weather, work accomplished for the day, observations regarding fish activity, estimates of fish. Be sure to include the daily and cumulative fish counts once you begin passing fish.
  20. Fill enough sandbags with gravel to place at least seven to eight sandbags on each weir tripod plus four sandbags for each flash panel.
  21. Install the weir, ensuring that it is fish tight, and install flash panels at each counting gate.
  22. Conduct surveys, operate and maintain the weir throughout the season, ensuring that it is fish tight, and enumerate fish species making sure your tally counters are working properly.
  23. Conduct weekly adult sampling of sockeye salmon.
  24. Complete data report forms, and transmit data during the 8:00 AM SSB Radio schedule.
  25. Maintain grounds around the camp as well as the buildings throughout the season.
  26. Conduct stream surveys if your camp is required to do so.
  27. At the end of the season, close up camp by removing the weir (Appendix C). Winterize all motorized equipment, oil all tools and equipment that will rust with LPS3, clean all living quarters and outbuildings, store tools and equipment that remain on site, disconnect propane tanks, replace window boards/shutters and clean up your burn barrel. Make sure your camp is clean and organized when you leave!
-

Table 2. Important tasks to remember.

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1. Data on forms should be complete. Be familiar with the forms and know when and how to collect the data. All crew should be familiar with the proper data collection methods.
  2. Data should be collected as consistently as possible. For example, water temperature data should be collected at the same time and location.
  3. Record use of all expendables, (i.e., propane, stove oil, and gasoline); this is a necessary procedure for future planning, and is also a requirement for the crew leader summary report.
  4. Make scale drawings of the adult salmon trap, and photo document as many aspects of field and data collection as possible.
  5. A daily crew log is a valuable way to record observations that may not be apparent from the data sheets.
  6. Be familiar with the operational plan. The procedures used at each individual weir camp have varying details, and it is important to be familiar with them.
-

Table 3. Example of closing camp checklist.

| <b>CLOSING CHECK LIST FOR DOG SALMON CABIN and CAMP</b> |   |
|---|---|
|   | Store food  |
|   | Clean stove & new alum foil   |
|   | Clean behind stove  |
|   | Clean out refrigerator - defrost, block door open, baking soda        |
|   | Tidy up cabin   |
|   | Mop floors - sweep first, also mop entry way                          |
|   | Pull out shutters - shutters on cabin & sauna building                |
|   | Window blocks in windows  |
|   | Pick up metal at burn pit   |
|   | 2X6's on shed door  |
|   | Disconnect propane lines & tape ends w/elec. tape & place on shelves  |
|   | Store fuel & propane tanks in shed                                    |
|   | Plug coax hole  |
|   | Plug vents for refrigerator   |
|   | Clean slop bucket   |
|   | Nail plywood on woodshed  |
|   | Clean ashes out of wood stove in sauna                                |
|   | Cover stove chimneys - sauna & cabin                                  |
|   | Flip up front steps & tie town  |
|   | Remove rear deck steps & sauna steps                                  |
|   | Grease axle on garden cart  |
|   | Pull boat anchor  |
|   | Dispose of perishable food, or bring back to town                     |
|   | Pull notes from clip boards   |
|   | Chain generator in west bedroom                                       |
|   | Oil shovels & rakes   |
|   | Store gas jugs in shed  |
|   | Oil drill bits in can   |
|   | Flip outhouse & cover hole  |
|   | Lock & chain skiffs (Lund & White skiff)                              |
|   | Winterize & fog 35HP Evinrude engine & store in shed                  |
|   | Cruise tanks in shed & tagged   |
|   | Oil stove plug & screw in   |
|   | Drain H2O tank  |
|   | Full charge on batteries, store in room and hook up solar panel       |
|   | Moth balls in jars (lids off) in each room & put outside around cabin |
|   | Lock west river shed  |
|   | Spray weir cables w/LPS-3 and cover w/sandbags                        |
|   | Disconnect water lines & tape ends                                    |
|   | Store rakes, shovels & tools, LPS3 all tools                          |

-Continued-

Table 3. (page 2 of 3)

|  |   |
|--|---|
|  | Store lawn mower, wheelbarrow, 55-gal drum and plastic garbage can.   |
|  | Subsistence net in sauna building   |
|  | Clean up burn pit   |
|  | Lay down viewing platform   |
|  | Fill produce cooler w/condiments in case they freeze & break  |
|  | Put shutter on wood shed  |
|  | Store chicken wire  |
|  | Remove coax cables & plug holes   |
|  | Spray cowling under lawn mower w/lps3   |
|  | Full charge on 12 volt batteries  |
|  | Remove downspout on water tank, drain tank and attach 45 elbow  |
|  | Stage Lund skiff, chain & lock  |
|  | Burn trash  |
|  | Pull notice on billboard, clipboards, subsistence permits, creel census & vendor supplies (license sales & harvest tickets) |
|  | Tape & secure coax cables   |
|  | Empty slop bucket & clean   |
|  |   |

#### Sauna Storage

|  |                           |
|--|---------------------------|
|  | Gas Drum                  |
|  | Pallet                    |
|  | Chicken wire              |
|  | Ladders                   |
|  | Metal stainless steel pot |
|  | Wheel barrow              |
|  | Lawn mower                |
|  |                           |

#### Items to Town

|  |                                      |
|--|--------------------------------------|
|  | SSB radio, handheld VHF and charger  |
|  | Rifle / Shotgun                      |
|  | Xerox box w/paperwork for Dog Salmon |
|  | Personal gear                        |
|  |                                      |
|  |                                      |
|  |                                      |

#### Skiff Winterization

|  |                    |
|--|--------------------|
|  | Fog motors         |
|  | Power wash hull    |
|  | Spray motors LPS-2 |

-Continued-

Table 3. (page 3 of 3)

|  |                               |
|--|-------------------------------|
|  | Change lower end lube         |
|  | Store cruise tanks in console |

**Pull**

|  |                   |
|--|-------------------|
|  | VHF               |
|  | Epirb             |
|  | Depth finder      |
|  | Compass           |
|  | Fire extinguisher |
|  | Totes             |
|  | Oars              |
|  | Buoys             |
|  | Anchors           |

**Notes**

|  |                                     |
|--|-------------------------------------|
|  | Need 100 LB propane for next season |
|  | Need 40 LB propane for next season  |
|  | Tanks left almost empty - all       |
|  | Fix 35HP elec. solenoid bracket     |

Table 4. Salmon weir camp equipment status.

### SALMON WEIR CAMP EQUIPMENT STATUS

WEIR CAMP Dog Salmon

REPORTED BY: Paul Kuriscak

DATE: 9/2000

Please log down your comments about the condition of the items listed below. Note if repairs or replacements need to be made and an estimate of materials to complete the job. If more writing space is needed, please use a separate sheet and staple to this form.

**CABIN:**

Foundation: Very Good

Roof: Very Good

Interior/Exterior: O.K. Very Good, but needs to be restained or painted.

Doors/Windows: All O.K.

**OUTBUILDINGS:**

Outhouse: Very good - All O.K.

Banya: Very good - All O.K.

**WEIR:**

Tripods: Starting to get old. One tripod needs to be replaced

Catwalk: Need four (4) 2" x 12" x 14'

Stringers: All O.K.

Panels: Adequate at this time Horse Marine is short 6 - 8 panels taken by.  
research crews

Rack Master Parts: (connectors, legs, stringers:)

Sand bags: needed for next year 100 - (Large ones)

-Continued-

Table 4. (page 2 of 2)

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| <b><u>SKIFFS:</u></b> |   |
|-----------------------|---|
| 21' aluminum skiff    | – need repair on rooftop and needs to be checked for leaks. |
| 16' Lund              | – leaks also needs power trim and tilt.                     |

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Table 5. Salmon weir camp closing inventory.

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### SALMON WEIR CAMP CLOSING INVENTORY

Weir Camp: Dog Salmon

Reported by: Paul Kuriscak

Date 9/2000

Please list any items left at the close of the season. This will help whomever to prepare in opening the camp next year. Also, if any vandals, people or bears break into the cabin, this will give us an idea of what might be missing or destroyed.

| # | Item                         | Place Stored  |
|---|------------------------------|---|
| 1 | Homelite chain saw           | Attic   |
| 1 | Royce CB                     | Storage bench in cabin  |
|   | Arco solar panel             | Attic behind insulation bundles                                   |
| 1 | Skillsaw - worm drive        | Attic in wooden box   |
| 1 | Cooler                       | West bedroom  |
| 1 | Ratchet set                  | In Dog Salmon cabin   |
|   | Tool box with hand tools     | Attic in wooden box   |
| 1 | 3/8" skill power drill       | Equipment shed  |
| 1 | 16' Lund skiff               | Under lock and key chained to a tree near to the Dog Salmon cabin |
| 3 | 12 v batteries w/full charge | In Dog Salmon cabin   |
|   | 10 gallons gasoline          | Equipment shed  |
|   | 10 gallons stove oil         | Equipment shed  |
|   | 5 gallons Blazo              | Equipment shed  |
| 1 | 35 HP Evinrude               | Dog Salmon cabin shed   |
| 1 | Homelite weed cutter         | Attic   |
| 1 | VHF Base                     | Returned to office  |
| 2 | Coleman lanterns             | Dog Salmon cabin  |
| 2 | Flashlights                  | Storage bench   |
| 2 | Head lamps                   | Storage bench   |
| 1 | Rifle cleaning kit           | Storage bench   |
| 1 | Shotgun cleaning kit         | Storage bench   |
| 1 | First aid kit                | Storage bench   |
| 1 | Tool belt                    | Equipment shed  |
| 3 | Extension cords              | Equipment shed  |
| 1 | Come along                   | Equipment shed  |
| 1 | Hand saw                     | Equipment shed  |
| 3 | Shovels                      | Equipment shed  |
| 1 | Carpenter's level - 4'       | Equipment shed  |
| 1 | Carpenter's level - 2'       | Equipment shed  |
| 3 | Hammers                      | Equipment shed  |
| 4 | Rakes                        | Equipment shed  |
| 2 | Pews                         | Equipment shed  |
| 1 | Pitchfork                    | Equipment shed  |
| 1 | Tire pump and gauge          | Equipment shed  |

-Continued-

Table 5. (page 2 of 2)

|   |                                 |                     |
|---|---------------------------------|---------------------|
| 1 | Garden cart                     | Front deck of cabin |
| 1 | Wood chopping ax                | Equipment shed      |
| 1 | propane tank-3/4 full 40lb tank | Equipment shed      |

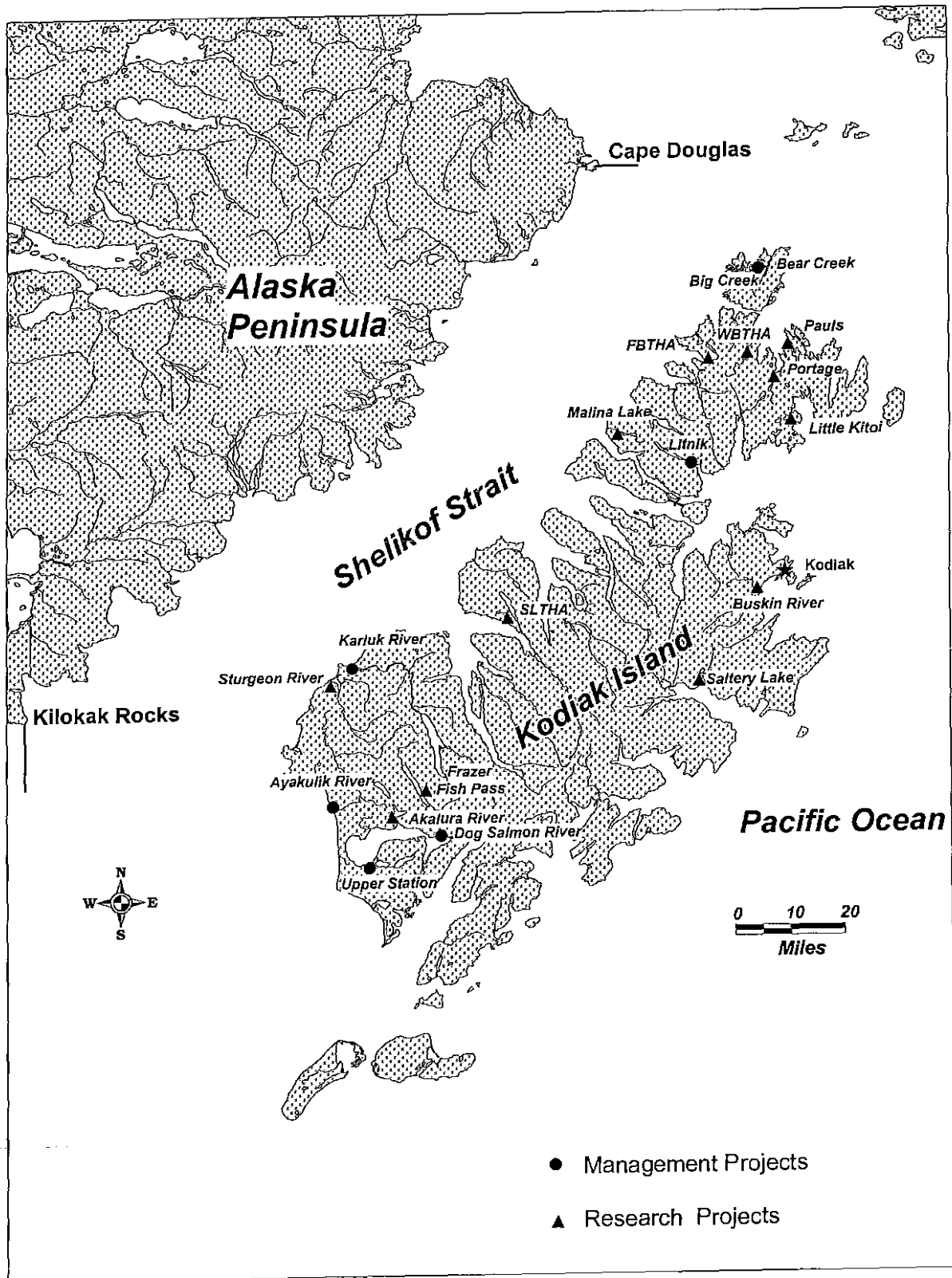


Figure 1. Alaska Department of Fish and Game salmon escapement weir locations in the Kodiak Management Area, 2002.

| WEIR CAMP                         |                               |            |         |      |      |      | WEEKLY REPORT                      |          |                   |           |    |           |                            |        |                        |      |                       |         |         |               |  |
|-----------------------------------|-------------------------------|------------|---------|------|------|------|------------------------------------|----------|-------------------|-----------|----|-----------|----------------------------|--------|------------------------|------|-----------------------|---------|---------|---------------|--|
| LOCATION: Dog Salmon              |                               |            |         |      |      |      | PERSONNEL: P. Kuriscak, Jon Becker |          |                   | NO. 2     |    |           | FOR WEEK ENDING (SATURDAY) |        |                        |      |                       |         | 6/17/02 |               |  |
| DATE                              | DAILY TOTAL SALMON ESCAPEMENT |            |         |      |      |      | DAILY TOTALS                       | JACK NO. | JACK % of SOCKEYE | STEELHEAD |    | DOLLYS UP | GILLNET MARKED             |        | H <sub>2</sub> O LEVEL |      | H <sub>2</sub> O TEMP | WEATHER |         |               |  |
|                                   | SOCKEYE                       | L. SOCKEYE | CHINOOK | PINK | COHO | CHUM |                                    |          |                   | DOWN      | UP |           | SOCKEYE                    | OTHERS | UP                     | DOWN |                       | CEIL.   | VIS.    | WIND DIR/SPD. |  |
| SUN D                             | 12                            |            | 0       |      |      | 0    | 12                                 | 0        | 0                 | 17        |    | 8         |                            |        | Stable @10"            | 5°   |                       | 3500    | unlim   | NE@10-15      |  |
| C                                 | 189                           |            | 5       |      |      | 0    | 194                                | 14       | 7.40%             | 44        |    | 21        |                            |        |                        |      |                       |         |         |               |  |
| MON D                             | 91                            |            | 0       |      |      | 0    | 91                                 | 9        | 9.90%             | 2         |    | 3         |                            |        | Stable@10              | 5°   |                       | Zero    | Zero    | SE@20-25      |  |
| C                                 | 280                           |            | 5       |      |      | 0    | 285                                | 23       | 8.20%             | 46        |    | 24        |                            |        |                        |      |                       |         |         |               |  |
| TUE D                             | 3,629                         |            | 12      |      |      | 2    | 3,643                              | 157      | 4.30%             | 13        |    | 26        |                            |        |                        | 1"   | 5°                    | 3000    | 7-10    | SE@15         |  |
| C                                 | 3,909                         |            | 17      |      |      | 2    | 3,928                              | 180      | 4.60%             | 59        |    | 50        |                            |        |                        |      |                       |         |         |               |  |
| WED D                             | 10,106                        |            | 13      |      |      | 5    | 10,124                             | 305      | 3.00%             | 3         |    | 34        |                            |        | Stable@9               | 6°   |                       | 3500    | 25mi.   | E@10-15       |  |
| C                                 | 14,015                        |            | 30      |      |      | 7    | 14,052                             | 485      | 3.46%             | 62        |    | 84        |                            |        |                        |      |                       |         |         |               |  |
| THU D                             | 23,897                        |            | 15      |      |      | 7    | 23,919                             | 907      | 3.80%             | 4         |    | 39        |                            |        | Stable@9               | 5°   |                       | 3000    | 5-7     | E.S.E.@10     |  |
| C                                 | 37,912                        |            | 45      |      |      | 14   | 37,971                             | 1,392    | 3.70%             | 66        |    | 123       |                            |        |                        |      |                       |         |         | and drizzle   |  |
| FRI D                             | 24,014                        |            | 45      |      |      | 9    | 24,068                             | 482      | 2.00%             | 4         |    | 33        |                            |        | Stable@9               | 5°   |                       | 4000    | unlim   | Wind Calm     |  |
| C                                 | 61,926                        |            | 90      |      |      | 23   | 62,039                             | 1,874    | 3.00%             | 70        |    | 156       |                            |        |                        |      |                       |         |         |               |  |
| SAT D                             | 10,008                        |            | 16      |      |      | 6    | 10,030                             | 212      | 2.10%             | 1         |    | 23        |                            |        | 1"@10                  | 6°   |                       | 3000    | 7       | N.E.@10       |  |
| C                                 | 71,934                        |            | 106     |      |      | 29   | 72,069                             | 2,086    | 2.90%             | 71        |    | 179       |                            |        |                        |      |                       |         |         | Drizzle/Rain  |  |
| TOTAL FOR WK                      | 71,757                        |            | 101     |      |      | 29   | 71,887                             | 2,072    | 2.90%             | 44        |    | 166       |                            |        | COMMENTS:              |      |                       |         |         |               |  |
| CUM. THRU WK                      | 71,934                        |            | 106     |      |      | 29   | 72,069                             | 2,086    | 2.90%             | 71        |    | 179       |                            |        | COMMENTS:              |      |                       |         |         |               |  |
| WEIR MORTS FOR WK TOT CUMMULATIVE |                               |            |         |      |      |      |                                    |          |                   |           |    |           |                            |        | COMMENTS:              |      |                       |         |         |               |  |
| AWL SAMP FOR WK TOT CUMMULATIVE   |                               |            |         |      |      |      |                                    |          |                   |           |    |           |                            |        | COMMENTS:              |      |                       |         |         |               |  |

**ADDITIONAL COMMENTS:** BEAR AND PEOPLE PROBLEMS; SMOLT MIGRATION; WEIR PROBLEMS; CABIN REPAIR; NOTE AIRCRAFT TRAFFIC.

6/14/00 30-40,000 fish on the flats

6/15/00 Passed a good number of sockeye today. Still approx. 25,000 still on flats.

6/17/01 Last evening bears broke two pieces of board walk and pushed out three weir panels.

6/17/01 Low flying aircraft (#UZ4567) flying over the grass flats and weir. While over the grass flats they were circling over a Brown bear.

\* NOTE: Daily Sockeye Jack counts must be included in the overall daily count.

Figure 2. Weekly Salmon Weir Count Report Form.

ALASKA DEPARTMENT OF FISH AND GAME  
STREAM SURVEYS

YEAR 2001

AREA ALITAK DISTRICT

STREAM NO. 257-401

NAME OF STREAM: NARROWS CREEK

LOCATION: OLGA BAY

| DATE OF SURVEY | DISTANCE SURVEYED (MILES) | NUMBER SALMON AT MOUTH | NUMBER OF SALMON IN STREAM |         |      |            |           | REMARKS  | OBSERVER    |
|----------------|---------------------------|------------------------|----------------------------|---------|------|------------|-----------|--|-------------|
|                |                           |                        | CHINOOK                    | SOCKEYE | COHO | PINK       | CHUM      |  |             |
| 7/31/01        | 3/4 of a mile             | 5,000                  | 0                          | 0       | 0    | 3,000      | 250       | H2O level low but adequate, many log jams      | P. Kuriscak |
|                |                           |                        |                            |         |      | (150 dead) | (13 dead) | but fish still able to ascend. Of the 5,000 at |             |
|                |                           |                        |                            |         |      |            |           | the mouth 1,500 are chum.                      |             |
|                |                           |                        |                            |         |      |            |           |  |             |
| 8/5/01         | 3/4 of a mile             | 2,000                  | 0                          | 0       | 0    | 4,500      | 1,750     | All salmon at the mouthe are pinks. Chums      | P. Kuriscak |
|                |                           |                        |                            |         |      | (175 dead) | (22 dead) | observed last week have moved into the         |             |
|                |                           |                        |                            |         |      |            |           | river.   |             |
|                |                           |                        |                            |         |      |            |           |  |             |
|                |                           |                        |                            |         |      |            |           |  |             |
|                |                           |                        |                            |         |      |            |           |  |             |
|                |                           |                        |                            |         |      |            |           |  |             |
|                |                           |                        |                            |         |      |            |           |  |             |
|                |                           |                        |                            |         |      |            |           |  |             |
|                |                           |                        |                            |         |      |            |           |  |             |
|                |                           |                        |                            |         |      |            |           |  |             |
|                |                           |                        |                            |         |      |            |           |  |             |
|                |                           |                        |                            |         |      |            |           |  |             |
|                |                           |                        |                            |         |      |            |           |  |             |
|                |                           |                        |                            |         |      |            |           |  |             |
|                |                           |                        |                            |         |      |            |           |  |             |

A=AERIAL SURVEY

F=FOOT SURVEY

T=COUNTED PAST A TOWER

W=COUNTED PAST A WEIR

Figure 3. Stream Survey Form



## APPENDIX A

### Weir Installation, Maintenance and Operations Procedures





## **KODIAK SALMON MANAGEMENT WEIR INSTALLATIONS, MAINTENANCE, and OPERATIONS PROCEDURES**

The following is a step by step explanation of how to install conventional and rackmaster weirs. In addition to installations; operations and maintenance procedures are covered. If you've never installed a weir and need clarification regarding any of the steps outlined below consult an experienced coworker or your project supervisor.

### ***Weir Installation***

#### **CONVENTIONAL**

- Move tripods from their staged location into the river and roughly space them spanning across the river.
- Install a cable across the river and tighten it up with a come along. Line up and square the tripods perpendicular to the river flow and cable attempting to keep the front tripod leg one eighth of an inch from cable.
- Fine tune tripod spacing and leveling. Level out tripods by digging under the highest rear leg to level it out. Leveled tripods make it much easier to install and level your boardwalk.
- Install the entire boardwalk shiplap on the posterior portion of the tripod arms; nail it down only after it is all leveled. Start at one end of the weir laying a 2"x 12" x 14' across the first set of tripod arms ensuring it rests on the next consecutive tripod arm. Continue laying out the board walk in the same consecutive pattern attempting to keep it running straight across the river on the posterior portion of the tripod arms.
- Level boardwalk with spacers or leveling blocks nailed to the tripod arm, and fine tune straightness of the boardwalk. Toe nail the boardwalk to tripod arms and toe nail the boards that overlap one another together, with 16P duplex nails. Make sure the end of each individual board rests on a tripod arm.
- Install eight sandbags (filled with gravel) on each of the tripods. If you can utilize large rocks from the river bottom to weight down your tripods forego the sandbags.
- Install upper and lower 4"x 4" stringers in an alternating pattern across all tripods and extending to the riverbanks on both ends of the weir. The upper set of stringers rest on the upper set of spikes on the front leg of the tripod and the lower set of stringers are installed under the lower spikes with the water pressure keeping them secured in place.
- Place each counting gate frame into approximate locations on the weir framework. Determine your locations on stream depth and counting seat locations.

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-Continued-

- Move all weir panels from their storage location and lean them on the back of the rear tripod legs. You can place approximately six weir panels on the back of each tripod. Placing panels in this location stages them for installation.
- Before installing weir panels, make sure the upper and lower 4" x 4" stringers that extend from the riverbank to the first tripod on either bank are square to one another. If not square, these panels will not be on an equal plane with the remainder of the panels inward from either end of the weir.
- Begin installing all weir panels. Lay the first panel flat against the stringers and as tight to the bank as possible, with the base of the panel up off the riverbed approximately 10 inches. Rake and dig a channel in the river bottom to set the panel into. Once a channel is dug, set the panel into the channel and make sure it is straight and level. Next, backfill the channel with gravel and rock to ensure it is fish tight.
- Continue setting weir panels as above, and work toward the first counting gate you encounter. When you get close to the first gate frame you will need to estimate whether or not you can use a full panel or partial panel to close the gap from your last panel installed to the gate frame. If a partial panel will not fit or is not available, move the gate frame to accommodate a partial panel or a full panel. Continue installing weir panels and gate frames until your weir is completely set with panels and gates. Tie off the upper portion of all weir panels to the upper 4" x 4" stringer with seine twine.
- Once weir panels and gate frames are installed, proceed with installing boardwalks to each counting gate. This is accomplished by selecting shorter pieces of boardwalk and extending them across the main boardwalk to the upper 4" x 4" stringer just behind the gate framework. Toe nail the gate boardwalk; to the main boardwalk and to the 4" x 4" stringer. Install weir gate panel. The weir should be fish tight.
- Install flash panels in front of, and against, each gate on the river bottom and weight down with large rocks or sandbags.
- Inspect and double-check your work. Walk along the front of the weir backfilling the base of panels where necessary to ensure the weir is fish tight.

## **RACKMASTER**

Rackmaster weirs consist of a series of aluminum pipes, bipods, stringers and monopods that support the weir panels and boardwalk. All pipes are joined together with assorted couplings, T-joints, elbows, post sleeves, and other various connectors. Pipes are inserted into the connectors and are held in place with hex head screws.

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-Continued-

- Aluminum bipod legs are set in 90° elbow/stringer connectors with the upper 10' stringer inserted into the stringer portion of this connector. The top stringer should sit approximately 48" above the riverbed.
- On the front leg of the bipod, a stringer/coupler connector is slipped up the front leg and set approximately 17" up from the bottom of the leg.
- Attach another 10' section of pipe to the stringer portion of the stringer/coupler on the front leg connector; this will be your lower stringer.
- Slip a single ring open-end connector onto the upper stringer and set it in the middle of the ten-foot section of pipe. This will be for your bipod that supports the boardwalk.
- Attach another assembled bipod to the section you have just assembled and you now have a complete section.
- Level out the open-end ring connector placed on the upper stringer and set a 5' section of pipe into the open end and tighten the setscrew. At the end of this five-foot section attach a T-joint.
- Slip another five foot section of pipe through the "T" joint and firmly imbed it on the river bottom and hold it into position with the set screw. This bipod assembly will support the boardwalk.
- You have just completed a full section. Continue assembly until you have spanned the entire width of the river.
- Once you have spanned the river place your boardwalk on the monopod supports, toenail them together, and then secure sections of the boardwalk to the monopods with seine twine.
- Install weir panels, gates, and flash panels next (read the descriptive procedure for these steps in the previous section; Conventional Weir Installation.)
- Sandbag the base of all weir panels.
- Attach upper portion of the weir panels to the upper stringers with seine twine.

### ***Weir Maintenance and Inspection***

- The weir must be cleaned and inspected daily. Debris build up on the weir may cause poor water flow, leading to scouring at the base of weir panels and weir washout during periods of high water. During high water and when spawned salmon begin to expire, debris build up may increase, and the weir must be cleaned more frequently.

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-Continued-

- Clean and inspect weirs before the 8:00 AM radio schedule, throughout the day, and in the evening before you retire. The AM cleaning and inspection allows you to report any panels that may have been moved out of place by bear activity during the night and the possibility of fish that may have escaped up stream uncounted. If it appears that fish escaped during the night you will have to make an estimate. This includes an estimate of species composition. Be extremely observant throughout each day to monitor fish build-up in the river, lagoons, and offshore in the bay. For example, if you observe a build-up of 10,000 fish in a lower section of the river below the weir, and you pass 3,000 fish for the day; that leaves 7,000 fish remaining in the lower river, barring no other fish have moved into the system. If by chance the next morning you clean and inspect the weir and you find a panel popped out of place by bears or a scoured hole is found your 7,000 fish may be gone. Survey the river below the weir, lagoon, and bay to see if the 7,000 fish still remain either in the river, lagoon or bay. It is extremely important to clean and inspect the weir, monitor fish activity and conduct surveys regularly throughout the day to be aware of any changes that may have occurred. Document all problems with the weir, as well as any changes in the volume of fish you observe in your surveys.
- Cleaning the weir includes getting into the river to remove sticks, logs, leaves, grasses, gravel and spawned out fish that have expired. Throw all debris over the weir, allowing it to flow down river. While you clean, inspect the weir to ensure it is fish tight, look for scoured holes, panels out of place, gaps that are too large between panels, sandbags that have been pushed off of tripods by bears, and make sure flash panels are in place and secure. Also make sure the framework of the weir is sound and secure. If you find any of the boardwalks loose, any section or parts of the weir broken by bears or unsafe repair it immediately. In addition, when water level in the river drops, the lower 4" x 4" stringers may drop due a decrease in water pressure holding them in place. If this occurs it is necessary to lift them back into place and tie them to the upper stringer to keep them in place.

In many systems during the later portion of the season (typically mid August) churn and pink salmon spawn in front of the weir, causing gravel and rock build up on weir panels. It is extremely important to keep gravel and rocks from building up on the weir panels. If not kept in check and maintained water flow is restricted and a gravel dam may form. When gravel dams form, there is a gradient difference in the streambed in front of the weir compared to the downstream side of the weir. This produces a waterfall effect, causing fish to jump against the weir panels. Keep gravel and rock buildup at a minimum by raking rock down off weir panels with your boots, then pushing the gravel up stream. Pick out rocks that are wedged between individual weir pipes.

- If water levels increase considerably you may need to pull weir panels to avoid weir wash out. Monitor water levels daily, especially if it has been raining hard or for a considerable amount of time

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-Continued-

and the ground is saturated. If it begins to down pour there is a good chance you may need to pull weir panels. Monitoring weather forecasts on SSB frequency 4.125 MHz at 8:00 AM and 6:00 PM will assist you in determining when to pull weir panels if necessary. Consult with project supervisor if possible.

### *Weir Operations*

- Monitor weirs throughout the day to pass fish. Fish are not on a “9 to 5” work schedule, therefore you need to adjust your work schedule to monitor the weir throughout the day. Be poised and ready! Keep in mind that you also need to pass outmigrating steelhead. Early AM is a good time for passing steelhead down stream by opening a gate and tallying passage down stream. Steelhead are wary fish, it takes time and patience to pass them down stream. Some camps have steelhead traps installed to capture downstream migrants, and more will soon be installed. Open trap and release fish downstream as soon as possible
- If you don’t have experience-identifying fish, your crew leader will train you to visually recognize the different salmon species and swimming patterns. When fish have accumulated behind the weir take time to visually study them and note the difference as they pass through the weir. You should not be playing a guessing game when identifying and counting fish. Individual’s livelihoods, and fishery opening and closures are dependent on the accuracy of your fish counts. Be professional and accurate.
- Walk slowly when fish are present under and behind the weir, if not they will be frightened and flee away. Wearing dark green rain gear is preferred while counting if it is raining; orange or yellow rain gear is bright and will also frighten fish away.
- Open a gate and begin counting fish with handheld tally counters, one for each species. Regulate the gate opening by using a wedge to lock the gate into position. If you open the gate too far, fish will pass through so quickly that you will not be able to accurately count and identify them.
- If a counting gate will not open, it is likely that it is locked up by gravel or a rock wedged into the framework. Do not attempt to force the gate, or the entire framework may pull out of place along with the flash panel set up. Free up the gate by inspecting for wedged rock or gravel and removing it with your fingers or a fish pew.
- You may be required to pass fish for a lengthy period of time, and water flow through the weir can lull you to sleep. To avoid fatigue, alternate counting positions from the counting seat to a standing position on the boardwalk behind the gate.
- Be careful climbing onto and off of counting seats. Do not bounce or jump on the boardwalks.

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-Continued-

- Always wear polarized glasses while passing fish for greater visual recognition and eye protection from the sun's reflection off of the water.
  - Periodically check your tally counters to ensure they are working properly.
  - When you are done counting make sure the counting gate is closed completely.
  - When visitors stop by, attempt to keep the visit short. Don't forget to accomplish your duties. There may be times when you have to tell visitors you have to get back to work.
  - Take pride in your work, be self-motivated, consistent, reliable, and do your best.
-

## APPENDIX B

### General Equipment, Camp Maintenance and Camp Policy





## Equipment Maintenance

Equipment maintenance is perhaps one of the most important operations you will perform during the field season. Outboard motors and generators must be kept in good operating condition and require regular maintenance. At the end of each season all equipment should be tagged with a description of the equipment's condition on the tag. All equipment returning to town should be stored at the warehouse in the salmon management locker or the salmon management trailer van behind the warehouse.

It will be the crew leader's responsibility to assign the most knowledgeable member of the crew to the job of maintaining and servicing the equipment. It will be this person's responsibility to see that all equipment is kept in operating condition.

## Motor Care and Outboard Operation

Motors will perform longer and give less trouble if these suggestions are followed:

1. The correct outboard motor fuel mixture for standard 2-stroke engines is 50:1. The newer Precision Blend outboards mix the two-cycle oil and gas automatically, but older engines will need to have their fuels pre-mixed. Always pour the oil into the tank first, then add 2 or 3 gallons of gas and mix thoroughly, then fill tank to capacity always using a large funnel and chamois filter.
2. Chainsaws have a fuel mixture of 25:1. Chain saw gas should be mixed in a 5-gallon can and clearly marked as chain saw fuel.
3. When mixing gasoline or filling the tanks of the generator, stove or lantern, keep the following in mind:
  - a. Fill camp stoves and lanterns outside, as the danger of fire is very real.
  - b. Always mix fuel tanks or equipment under cover to prevent water contamination and always use a funnel and filter.
  - c. A little extra effort toward cleanliness will pay in hours of trouble free operation.
4. Always place outboard motors in neutral when starting, shutting off the engine and always make sure a safety line is attached to the boat and motor.
5. Perform a check daily of the clamp screws that hold the outboard to the transom. Also routinely check the motor for loose screws and bolts, cracks, and breaks, especially in the area of the lower unit.
6. Never start or run an outboard in the tilted position.

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-Continued-

7. In the normal operation of an outboard, a "tell-tale" stream of water is discharged from a hole in the bottom rear edge of the cowling or from the back of the shaft. If this stream of water stops, the water pump is not working and the motor should be shut off. On propeller outboards, the side plate over the water intake can be removed for temporary relief as it may be plugged. If the pump continues to malfunction, the outboard should not be operated, and a report to base camp should be made. On jet units, a cover on the side of the cylinder head through which water circulates can be removed and cleaned, and the cover over the temperature sensor can also be cleaned to restore flow. Take along a piece of baling wire to dislodge sand from the small water discharge tube under the cowling.
8. Check the gear oil in the lower unit of the outboard once a week and drain and replace the gear oil every 50 hours of operation. Jet units must be greased daily. This is crucial. Grease guns will be provided.
9. If the skeg or jet unit hits bottom, check the screws for tightness, and look for housing damage or oil leakage.
10. If your outboard will not start, check the following:
  - a. Make sure the on/off switch and safety clip is in the on position
  - b. Check to see if the fuel line is connected to the motor and the tank and not pinched or kinked, and that the air vent on the tank is open.
  - c. Check to see if there is water in the gasoline.
  - d. If the engine is flooded, wait five minutes for the plugs to dry before attempting to start again.
  - e. Check the spark plugs as they may be fouled or defective (replace if needed).
11. All outboards are to be tilted in the up position when moored to preclude silt accumulation in the jet unit or water pump, and skeg or housing damage.
12. At the end of the season, winterize all outboard motors by changing the lower unit oil, remove and clean or replace spark plugs, and fog the engine.

### Boats

1. Boats are to be kept clean and free of loose tools and debris. Only moor boats where they are not subject to damage from wave action or contact with the river bottom in rocky areas.

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2. Each crew leader will be responsible for maintaining mooring stakes on the river bank sufficient for the boats assigned to his project plus one transient craft. Further responsibility includes maintaining a bowline on each assigned craft and ensuring that each boat is properly moored at the end of each workday to preclude possible loss or damage.
3. Check for leaks.

#### Generators

Portable generators may be supplied to field camps. Their maintenance follows the same line as for outboards. Generators have 4-cycle engines; mixed gas must **not** be used. The crankcase oil reservoir should be checked daily and maintained at the full level. After 25 hours of operation the oil should be changed. Spark plugs should be checked every season for fouling and gap.

#### Additional Camp Maintenance and end of Season Chores

Maintaining a clean and efficient campsite is required. A few of the things to check are:

1. Maintenance of living accommodations and other installations will be performed as necessary. All materials necessary will be provided.
2. Grounds will be kept free of litter. All garbage will be burned at least twice a week. Special precautions should be observed to ensure that garbage does not attract bears and other scavenger species.
3. Upon completion of the summer season, all camp equipment will be cleaned for winter storage.
4. All sampling nets, tents, and tarps must be dry before being stored.
5. The crew leader at the close of the field season will take a complete camp inventory.
6. All boats and ATVs will be chained and locked to a stationary object at the end of the season.

#### Camp Policy

1. No alcoholic beverages are to be stored in areas open to public view. If alcohol is consumed at a camp an employee must be off-duty and under no circumstances shall he or she engage in the operation of any State equipment, including boats and motors, nor shall he or she return to duty status under the influence of alcohol.

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2. All employees will be required to act in a professional manner at all times and be especially courteous to the public.
  3. It will be the responsibility of the crew leader to prevent any abuse to State equipment.
  4. Injuries, and loss or damage of state equipment must be reported to the supervisor within 24 hours.
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APPENDIX C  
Weir Removal Procedures



## WEIR REMOVAL PROCEDURES

Listed below are recommended procedures for removing weirs. Begin closing up camp well in advance. Perform some of the following tasks before the last few days out at field camp. By doing so you can perform all necessary tasks of removing the weir and closing up camp on time. Also refer to Table 1.

### *Weir Removal*

- Remove counting seats and keep off weir signs.
- Remove all sandbags from tripods and place half of them on one side of the river and the other half on the other side of the river.
- Cut and remove all seine twine attaching weir panels to upper 4" x 4" stringers.
- Remove all weir panels, counting gates, and flash panels, placing them on the rear of the tripods. Carry half of all weir panels, gates, and flash panels to staging locations on either side of the river.
- Remove all upper and lower stringers and store in appropriate staging location.
- Remove all duplex nails securing the boardwalk, then move all sections of the boardwalk and store in appropriate staging location.
- Remove half of all tripods and stage on one side of the river, then remove the other half and stage on the opposite side of the river.
- Make sure all poly sandbags are removed from the river.
- Make sure all weir materials are staged in an appropriate location to avoid damage from flooding, and ice movement during springs break-up.

To remove **RACKMASTER** weirs reverse the procedures used to install them. Remove all hex-head setscrews from connectors and place them in a sealed container of oil. Another option is to remove them, apply never seize and reinstall.

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## APPENDIX D

### Equipment and Supply List



## EQUIPMENT AND SUPPLY LIST

Field equipment for the commercial fisheries salmon management weir and field projects is stored at the ADF&G warehouse on Rezanof Drive. At the warehouse, mustang suits/coats, tents, camp gear, SSB radios, solar panels, and 12-volt batteries can be found on the first floor in the salmon management locker. This locker is located on the first floor at the northeast corner of the building. Additional cold storage gear such as rafts, lines, anchors, and weatherports, can be found in the middle van north of the warehouse. Fuel, propane and gas cans can be found in the fuel shed also north of the D.O.T. warehouse. You are required to collect, maintain, and return your camp's equipment at the end of the season.

Listed below is a recommend list of equipment and supplies necessary for an extended duration at the weir field camps.

1. **TENT** – If needed, it is suggested that you set up the tent prior to leaving town to assure the proper poles and rainfly are present. Seam seal all seams thoroughly before going into the field.
2. **VISQUEEN OR TARP** - Use for tent ground cloth, and to keep equipment and supplies covered when you arrive or depart from field camp.
3. **RAFT** - Make sure proper floorboards, pump-hose, oars, drain plug, and patch kit are included. Assemble and inflate raft and check for leaks. Make sure you secure extra raft chamber valves.
4. **OUTBOARD MOTOR** – Check lower end unit lube. Bring spare spark plugs, lower end lube, fuel hose, and fuel filters. Make sure you have the proper fuel hose and tank for your motor. Don't forget 2-cycle oil for the motor. Gas tanks are stored in the fuel shed.
5. **COOKSTOVE & HOSE** – If needed, check to assure it works. Propane tanks are in the fuel shed. Be sure you have the proper hose for the cookstove.
6. **COOKWARE, SILVERWARE, & DISHES** – May already be at your camp, but don't forget the can opener.
7. **COOLER** – If needed, be sure to purchase a bag of ice during grocery shopping.
8. **LANTERN** – Remember to purchase lantern fuel, and extra mantles. Make sure it works.
9. **SSB RADIO** – Make sure the radio suitcase contains the black coaxial cable, 12-volt power cable, antenna (3.230 MHz frequency) and spare fuses.
10. **12 – VOLT BATTERY** – Make sure to charge battery; battery testers are available at the office (Battery must be transported in a case).

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11. **SOLAR PANEL** – Check wires and connections.

12. **BOAT KIT** – A Rubbermaid tote should include:

|                         |                              |              |
|-------------------------|------------------------------|--------------|
| Outboard lower end lube | Seine Twine                  | Fuel filters |
| 15. Funnel              | Flashlight (extra batteries) | Tool kit     |
| Extra outboard gas hose | Outboard oil                 | Hose clamps  |
| Flares and Flare gun    | Duct tape                    | Tide book    |

The following can be found in the fuel shed at the warehouse. Some fuels may need to be purchased. Fuels can be purchased from Kodiak Oil Sales, 715 Shelikof.

13. **PROPANE TANK & BLAZO** – Make sure propane tank is completely full and you have sufficient blazo.

14. **STOVE OIL** – Use only #1 heating oil.

15. **OUTBOARD GAS TANK, HOSE, OIL & GAS** – Be sure to know the correct mixture of your motor. Take at least 3 containers of gas, preferably one tank and two 5-gallon containers.

The following items can be found in the office except for mustang suits and coats, which are found, at the warehouse.

16. **FIREARM & CLEANING KIT** – Rifles, shotguns, and ammunition are available at the office; check with Joan Brodie. Know how to clean, load, and carry the firearm safely.

17. **OBSERVATION EQUIPMENT** – Binoculars and/or a spotting scope.

18. **COMMUNICATIONS** – Handheld VHF radio's, plus an extra set of AA batteries.

19. **EMERGENCY/ SAFETY EQUIPMENT** – This equipment is checked for proper operation semi-annually.

- EPIRB
- Firefly Rescue Light (one for each person).
- First Aid Kit
- Mustang Suit or Float Coat

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19. **PAPER WORK** – can be obtained from Joan Brodie and should include:
- |  |                           |
|--|---------------------------|
| 2 copies of current commercial fishing regulations | Yellow writing pad        |
| Time sheets  | First Aid/Safety booklets |
| Weekly Salmon Weir Report Form                     | Tide Book                 |
| Yellow Rite-in-the-Rain logbooks                   | Hunting regulations       |
| Yearly Calendar                                    | Sportfish regulations     |
| Copy of Current ADF&G Harvest Strategy             | Stream survey forms       |
| Copy of Current ADF&G S.O.P.                       |                           |

The following items need to be purchased. When you make a purchase, inform the clerk that your purchase is a Fish and Game, Commercial Fish Management charge and is tax exempt. The receipt you receive should be placed in Joan Brodie's invoice basket.

20. **GROCERIES** – Purchase sufficient groceries for approximately two weeks, plus some extra quick meals in case supply flights are delayed. Items need to include matches, dish soap, toilet paper, paper towels, garbage bags, along with food items. When selecting groceries consider the weight and bulk of your items. Keep in mind that besides your groceries you have a fair amount of other gear and supplies for your field camp. There are weight restrictions on all commercial air charters.
21. **PERSONAL GEAR** – Warm clothes, rain gear, hipboots, sleeping bag & pad, ADF&G float coat/suit, and books.

Other items to consider taking out to camp include the following:

22. **OTHER EQUIPMENT/SUPPLIES** – Include:
- Sandbags
  - Chainsaw
  - Generator
  - Microcassette Recorder
  - Cracker Shells

**Please Note:** The crew leader is responsible to make sure equipment problems are identified with a labeling tag. Information on the tag should include item's condition, repair information if any, other comments, the date and your initials. This will alert staff back in the office what items need maintenance. Labeling also speeds up equipment selection when preparing for the season.

At the end of the field season, please make sure all equipment from your camp is put away properly and in the correct place. If you choose to return next season, this may again be your gear. A few items such as lanterns, SSB radios, and 12-volt batteries probably will be shared with the herring camps but we're trying to keep the gear together.

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